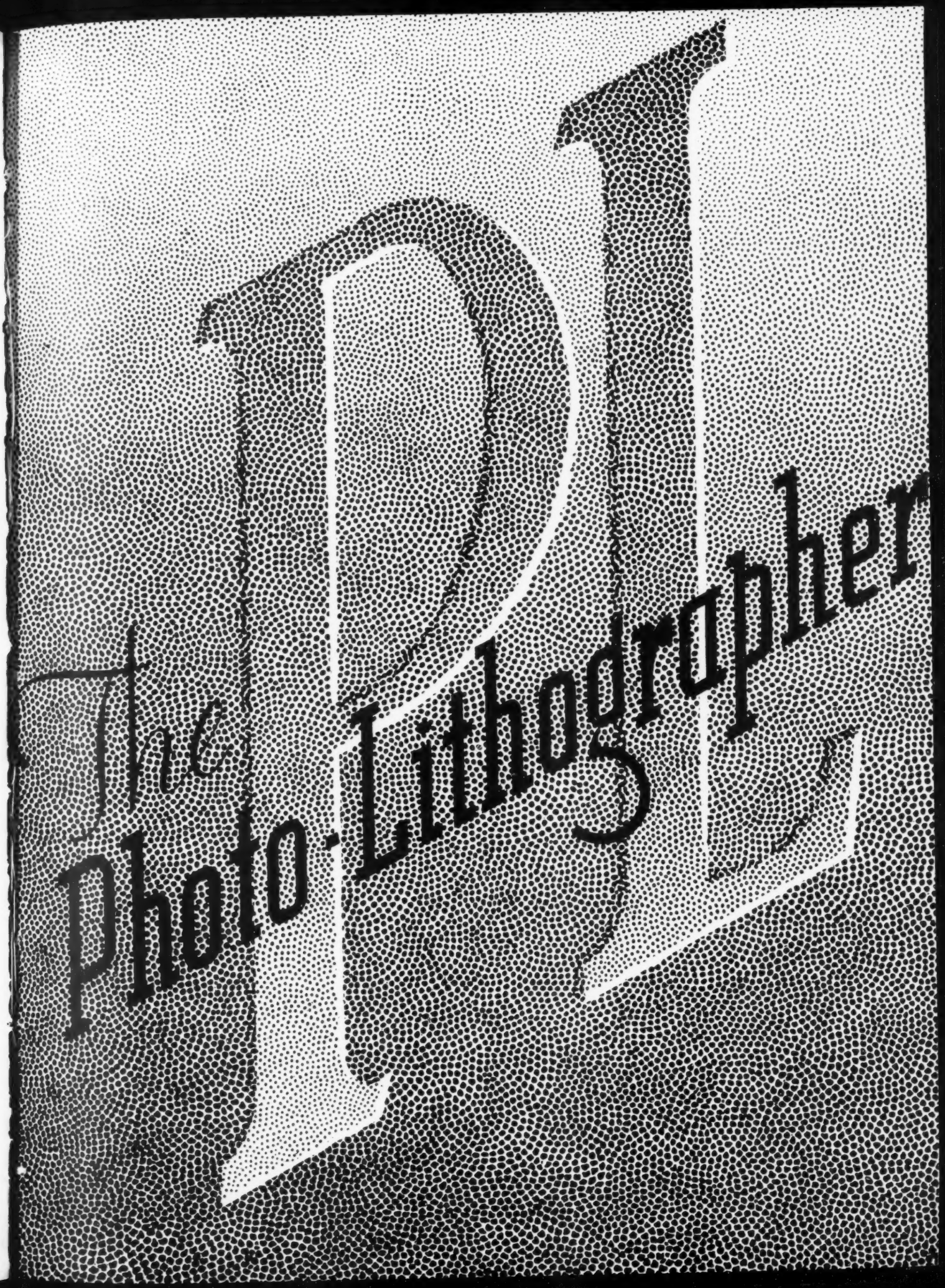
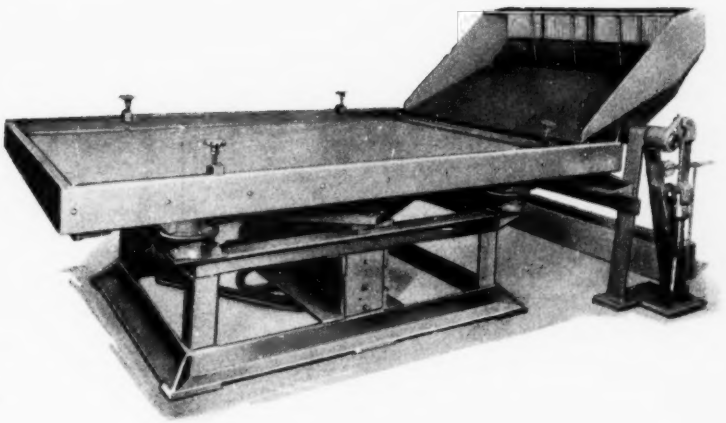

The Photo-Lithographer

✓ APPROVED

BY THE LEADERS!

The list of CURRENT satisfied users of the ZENITH — the only gearless, single eccentric graining machine made — reads like a "Who's Who" in lithography. With one voice the leaders of the industry acclaim this peerless machine.



• Many exclusive construction features have contributed to ZENITH'S Number One position in the lithographic industry. No noisy grinding gears — a single eccentric and self-aligning ball bearing that reduces wear 80%. Hydraulic marble lift is ZENITH'S latest exclusive feature. Replaces old marble graining baskets on all ZENITH grainers.

REBUILT OFFSET PRESSES

• Zarkin Machine Company's new, up-to-date quarters are the scene of craftsmanship unmatched in the lithographic equipment industry. The same expert skill that turns out the widely heralded ZENITH grainer and whirler is also at your disposal in the rebuilding of lithographic presses. There is no compromise with quality at the home of ZENITH equipment, Visit our workshops when you are in New York.

Literature on ZENITH equipment and rebuilt presses available on request.

ZARKIN MACHINE COMPANY, INC.

335 East 27th Street NEW YORK, N. Y.

Manufacturers of ZENITH . . *The Only Gearless Single Eccentric Graining Machine*

THE PHOTO-LITHOGRAPHER

Published in the Interests of Lithographers to Increase Sales Efficiency and Quality

WALTER E. SODERSTROM
PUBLISHER AND EDITOR

COLIN CAMPBELL
ASSOCIATE EDITOR

SAMUEL D. WOLFF
ADVERTISING MANAGER

Volume V — OCTOBER, 1937 — *Number* 10

Contents of This Issue

A Job Well Begun 11

Institutional Advertising Campaign Aimed at Strengthening Customer Relations ..... *Marshall Woodbridge* 13

New York Photo-Lithographers Association Holds General Meeting 17

The Superintendent in the Lithographic Industry ..... *Adam Henry Reiser* 18

Photo-offset Camera Operations ..... *Theodore S. Hiller* 20

Cutting Costs and Improving Quality Through the Working Layout ..... *Edward C. Sterry* 23

Selling Photo-Offset Lithography ..... *William Wolfson* 26

Developments in Offset Inks ..... *James Beckett* 28

Original Copy Versus Quality Layout ..... *Wm. A. Markert* 31

Estimating ..... *Simon J. Worms* 35

Production . . . the Way into Advertising ..... *Walter A. Lowen* 42

A New Method of Highlighting Negatives ..... *K. W. Martin* 45

Maintaining Profits Through Better Management ..... *Harry Arthur Hopf* 49

Counter-Etching and Etching ..... *Dr. L. R. Meloy* 53

Insurance—Protection for Your Investment ..... *Herbert H. Levess* 54

Sulphite, Sulphate and Other Pulps 62

Official Organ of the National Association of Photo-Lithographers. Published by Walter E. Soderstrom, 1776 Broadway, New York, N. Y.

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Acceptance under the Act of June 5, 1934. Authorized November 14, 1935.

Other publications issued: The Photo-Lithographer's Manual, $4.00.

MONTGOMERY OFFSET

A Proven Paper

PRE-HUMIDIFIED

HOLDS ITS HEAD HIGH ON ANY JOB

YOU will find that Montgomery Offset will give satisfaction, regardless of the class of work for which it is used.

It is guaranteed for lithographing in as many as sixteen colors. Since it is free from lint, fuzz, grit, or excessive alum, and has a hard tub-sized surface Montgomery Offset gives no trouble on the press.

Montgomery Offset is also well adapted to letterpress and water-color printing.

It is these points which make Montgomery Offset such a satisfactory paper to use. Test it on the next fussy job. You will agree with us that it yields the *utmost in satisfaction.*

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INCORPORATED
Fine Papers
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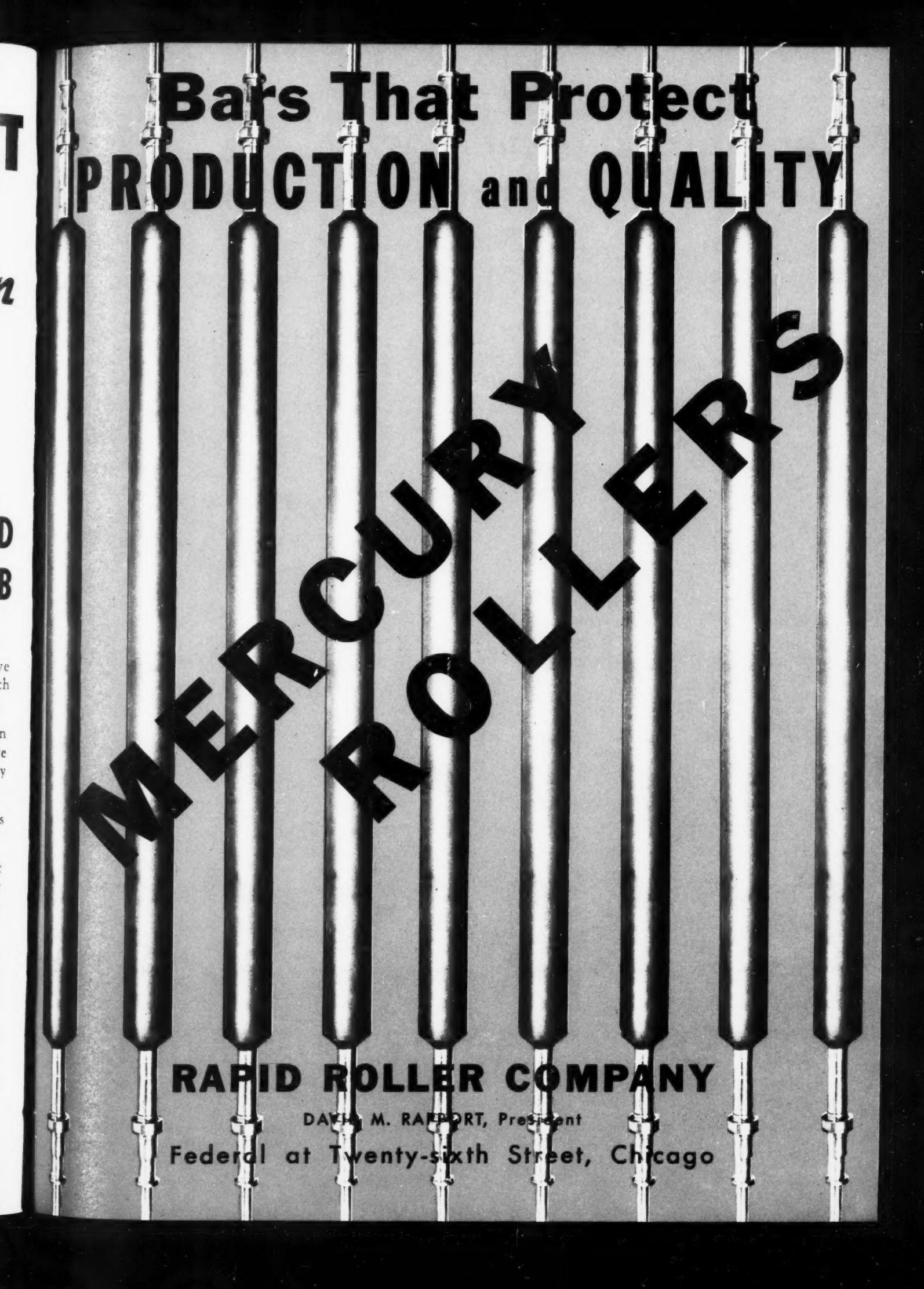

Bars That Protect
PRODUCTION and QUALITY
MERCURY
ROLLERS
RAPID ROLLER COMPANY
DAVID M. RAPPORT, President
Federal at Twenty-sixth Street, Chicago

Consider Equipment with Distinctive Advantages

Wesel Plate-Coating Machine

(Right)

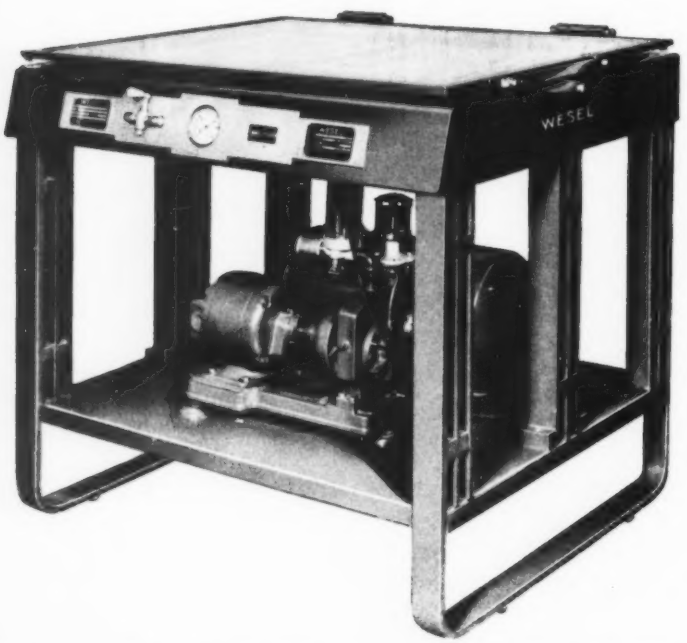
● This machine has an automatic *air-circulating* device that attracts no dust from outside. *A distinctive advantage.* Requires no extra motor for that purpose. Keeps the warm air *uniform and in constant motion,*—a factor insuring speed, consistency and cleanliness.

Driven by direct-connected, geared-head motor for positive and constant speeds, controlled by variable speed regulator.

In addition to the copper washing spray with automatic cut-off, this machine is fitted with a perforated copper spray pipe for cleansing the housing.

Alluminum Alloy revolving table; rustless alloy steel drum (*not tin*); ballbearing construction; adjustable legs; convenient drain connections; pilot light, etc.

Made in all Standard Sizes



Wesel Automatic Vacuum Printing Frame

(Left)

● This unit has several distinctive advantages. The *automatic vacuum control* saves over two thirds of the electric current. This one advantage makes the most popular machine we have ever designed. Over a thousand are in use!

Vacuum contact may be had in two to three seconds. And there are no hooks, clamps or fastenings. The new "quartz crystal" glass *permits 25% faster exposure.* Motor and pump are built into one integral unit, the metal base of which is supported on a series of compression springs, eliminating all noise and vibration.

Entire mechanism operated from one central control panel. Nothing to get out of order.

Made in Two Standard Sizes

WESEL MANUFACTURING CO. • SCRANTON, PA.

NEW YORK 468 Fourth Avenue • *CHICAGO* 201 N. Wells Street • *SAN FRANCISCO* 431 Clay Street • *MONTREAL* 637 Craig Street West

MONOTYPE EQUIPMENTS

For Use in the Composing Room

Monotype Typesetting Machine—The fastest and most economical method of mechanical typesetting; sets type of the highest quality for good printing in justified lines up to 60 picas wide in all sizes from 4 to 18 point, inclusive. Can also be equipped with special attachment to make display type for hand-composition in all sizes up to 36 point, and to make rules, leads and slugs in strips of all sizes from 2 point to 12 point, inclusive, delivered in continuous strips or automatically cut to any desired measure.

Monotype Type-&-Rule Caster—A machine especially designed for the purpose of casting type for hand composition in sizes from 4 to 36 point, inclusive, and for making rules, leads and slugs in strips of all sizes from 2 point to 12 point, inclusive; product delivered in continuous strips or automatically cut to any desired measure.

Monotype Material Making Machine—A highly specialized mechanism for casting continuous strip material: Rules in sizes from 2 to 18 point; leads and slugs, from 1 to 18 point; decorative strip borders, from 2 to 12 point; single-column leads, slugs and cut-off dashes, 2 to 18 point; product delivered in continuous strips or automatically cut to labor-saving measures.

Monotype-Thompson Type-Casting Machine—A specially designed type founding machine for making type, quads, spaces and individual ornaments and borders in all sizes from 6 to 48 point. The typographic resources available for users of this machine include every letter and character for which Monotype matrices have been made in sizes from 6 to 48 point.

Monotype Giant Caster—Casts type, quads and spaces in all body sizes from 14 to 72 point, inclusive, and makes solid metal furniture in 14, 18 and 24 point sizes, and hollow metal furniture in all sizes from 14 to 72 point, inclusive.

For Offset and Gravure Printing

Monotype-Huebner Vertical Photo-Composing Machine with Non-Embossing Negative Holder and Universal Register Device—Designed for the special purpose of securing close precision in registering negatives for single and multicolor process work in lithographic offset and gravure plate making. Accuracy in positioning images on the plate is assured by rigid construction and by the use of notch bar positioning mechanism with micrometer movement for final adjustment into position. Made in three sizes.

Monotype-Directoplate Simplex Photo-Composing Machine for accurate placement of images on offset or lithographic press plates. Simple in operation and designed for multicolor reproduction or simple black-and-white work, and step-and-repeat work. Made in two horizontal models.

Monotype Photo-Imposing System—A practical method by which line color register can be obtained without the use of a photo-composing machine in making offset press plates. The System involves the use of an Adjustable Layout and Register Table, an all-metal Registering Vacuum Frame and Register Chases. Made in two sizes.

Monotype-Huebner Vertical Plate Coating Machine—For distributing and drying coating solution on plates intended for use on offset and gravure presses. In comparison to horizontal machines it saves time, uses less solution and makes better plates. Standard model made in four sizes; Junior model in one size.

Monotype-Directoplate Typographic Camera—For the production of line, halftone and process negatives. Handles film or paper negatives, dry or wet plates.

Monotype-Directoplate Offset Color Proving Presses—Produces proofs in perfect register from either zinc or aluminum plates or from stones. Bed plates adjustable. Hand and electrically operated models in two sizes of each.

Folders in which each of the above units is fully illustrated and described will be sent on request.

LANSTON MONOTYPE MACHINE COMPANY

Monotype Building, Twenty-fourth and Locust Streets, Philadelphia, Pennsylvania

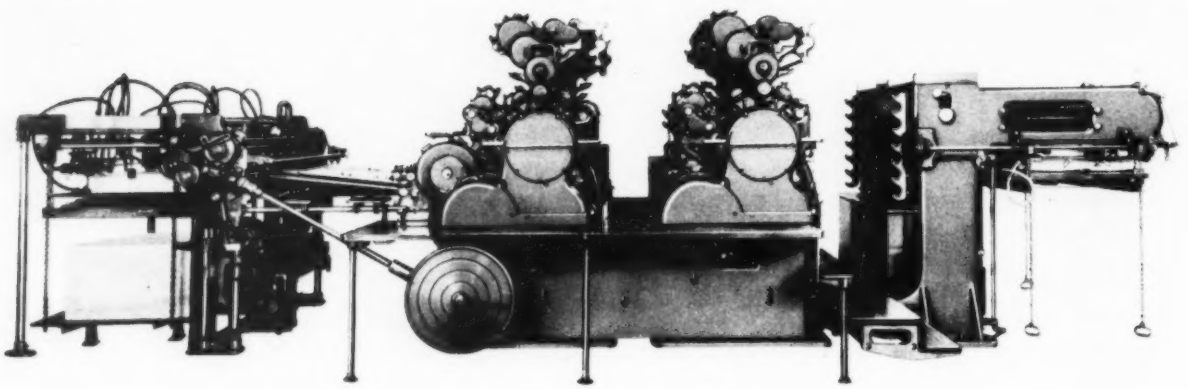
Safe for the client! The client runs no risk of disappointment or delay when his most important work is lithographed on a Miehle Unit-Type Offset Press.

Safe for the operator! The pressman operating a Miehle ***knows*** that he ***and*** the job are ***both*** safe with this press of proven dependability.

Safe for the owner! The owner of a Miehle Unit-Type Offset Press can safely count on pleasing his clients and still earn consistent profits at a fair price.

Size No.	Maximum Sheet	Speed at Register
69	46½ x 67½	4100
57	41½ x 55½	4500

Motored by KIMBLE



MIEHLE No. 57 TWO COLOR UNIT-TYPE OFFSET PRESS

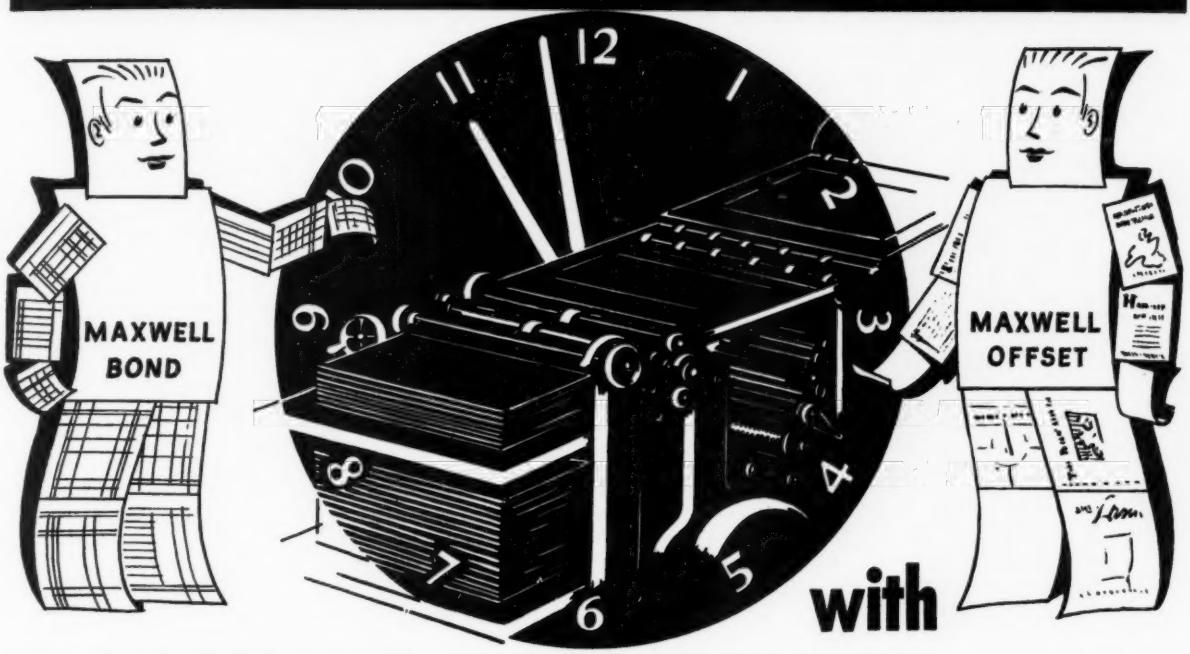
MIEHLE PRINTING PRESS & MFG. CO.

CHICAGO NEW YORK

HARRY W. BRINTNALL CO.
San Francisco Los Angeles Seattle

LITHOGRAPH IT ON A MIEHLE

PACK 60 MINUTES of PRODUCTION into every HOUR



with

MAXWELL BOND
WATERMARKED

MAXWELL OFFSET
TUB-SIZED

Increase your press production with the Maxwell Twins. These strong sheets cut down running time, feed and fold better, reduce costly down-time. Furthermore, their freedom from lint and fuzz, and their uniformly fine finish produce work with the snap and sparkle that does your shop proud.

In today's market minutes count. Make every minute pay a greater profit by running more jobs on MAXWELL BOND and MAXWELL OFFSET. Write today for prices and sample portfolios.

THE MAXWELL PAPER CO.
Franklin, Ohio

MAXWELL IS MADE WELL

MAXWELL BOND Envelopes, *quick adhesion, permanent stick*, made under our own management by our affiliated subsidiary DAYTON ENVELOPE COMPANY, DAYTON, OHIO

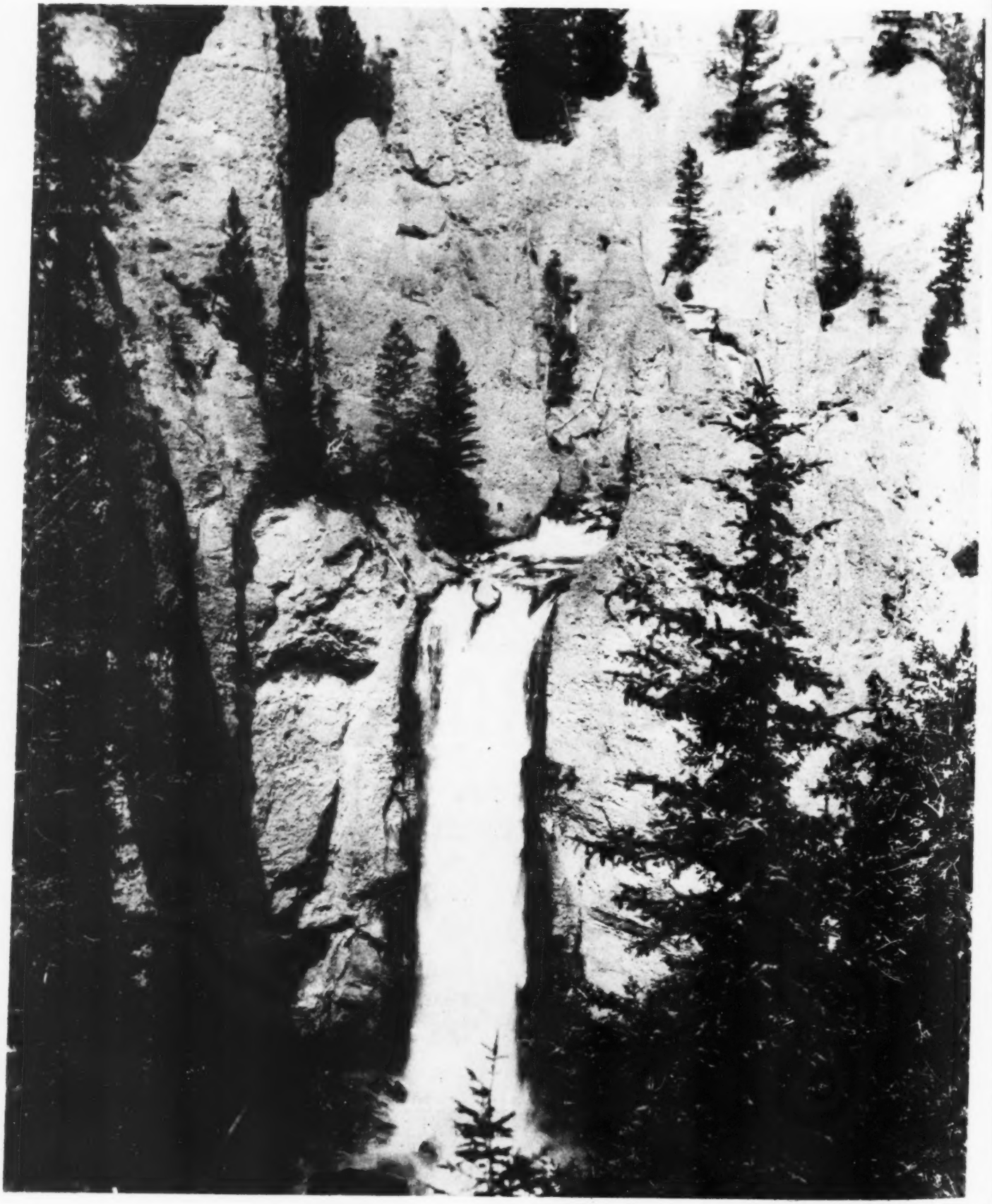


Photo by J. C. Kiefer

Tower Falls, Yellowstone Park

THE
PHOTO-LITHOGRAPHER

Published in the Interests of Lithographers to Increase Sales Efficiency and Quality

Volume V OCTOBER, 1937 *Number* 10

A JOB WELL BEGUN

We have watched with much interest the sales promotion work of the bank and commercial stationery lithographers. A job well begun should have the whole-hearted support of every lithographic plant in the country producing bank and commercial stationery. We congratulate this progressive group of lithographic establishments on their fine sales promotion endeavor.

THE advertising and promotional campaign of the Institute of Bank Stationers which has now been running for two years, is creating considerable interest in the graphic arts and particularly in the lithographic industry. There are probably three major reasons for the increasingly wide-spread recognition of the campaign.

The first, from the standpoint of those operating in the graphic arts is that the idea of a trade association embarking upon and successfully carrying through a planned campaign is a refreshing innovation. Other campaigns have been started in the past but few, having begun on a modest basis, have grown and prospered. It is becoming apparent, in other words, that a well worked out campaign proceeding on sound lines makes in itself a contribution to the vitality of a trade association. Such a campaign can, and when successful, does structuralize the aims and directs the energies of the association and its members. But campaigns as such are obviously not the answer. A campaign must justify its existence and fill a need. This brings up the second point about the Institute campaign.

The Institute campaign, different from most advertising efforts, does not directly advertise the products of bank stationers. It is rather a campaign of ideas. The basic idea is that banks, now engaged upon a national program for constructive customer relations, should give appropriate consideration to the place which bank stationery holds in helping or hurting customer relations. After all, every bank transaction is reduced to paper—internal forms and external forms such as letterheads, checks and passbooks. The customers of banks and prospects come into contact with the banks most often through these external forms. Just as with all other printed matter, these forms create impressions with people. The continuous creation of these impressions, good and bad, are what make for practical decisions such as using one bank against another for business purposes.

The Institute campaign has guarded against falling into the error of over-stressing the importance of bank stationery. It has simply sought to bring before the banker the necessity for not neglecting his bank stationery policy when mapping out his broad policies with respect to improved customer relations. The copy has been geared for what it was to do. This necessarily brings up the third phase of the campaign which is the character of the copy.

The Managing Director of the Institute, Malcolm McComb, has stated that it was after considerable investigation of the field that the Institute retained the Merrill Anderson Company who are specialists in financial advertising. Naturally there was a precautionary attitude on the part of members, he states, to be sure that the campaign would be inoffensive and yet effective. The Executive Committee of the Association, who were authorized to determine the advertising policy, mapped out what the association was seeking to accomplish. From

this the Merrill Anderson Company took over the work. The campaign has been well received because the copy is considered excellent for the job it has to do. It has been good natured and well mannered. But most of all it has bespoken a sincere attitude on the part of its sponsors to make a real if necessarily circumscribed contribution to the efforts of their customer industry—the banks—in building stronger public relations. The campaign has used two media, banking journals and direct mail pieces. In addition, the association has supplied member houses with reprints of the ads and direct mail pieces in sufficient number to provide copies for the salesmen of the member houses. The members have been coordinating their own merchandising efforts with the campaign by sending out sales bulletins stressing the points made in current ads and in general, getting the salesmen to talk more and more the bankers' language. Certain houses have made up their own mailing pieces tying in with the campaign and have either circularized customers in special mailings, or used the pieces as envelope stuffers. Even in answering quotations the members, where practicable, suggest a higher quality article while quoting on a request for a customer. Little by little the sales efforts have been directed away from price as the sole consideration to the idea of bank stationery doing a specific job for the customer. Naturally this effort has been toward getting the customer to decide what type of job his institution requires. When he has made that decision, the question of price becomes necessarily secondary.

The ads have stressed that members can compete on a basis of quality, service or price, but to do the most effective job for the customer, his decision should take into account all three elements. Virtually every ad stresses that the campaign is being carried on as the contribution on the part of the Institute to the improvement of customer relations between banks and the public.

At this year's convention of the Financial Advertisers Association, panels displaying financial campaigns of particular interest were exhibited at the meeting. One of the panels contained several ads of the Institute campaign. A photograph of this panel is reproduced on this page.

The program for each year's campaign is laid out toward the end of the preceding year. Preliminary plans are now being drawn up for the 1938 program. These will be acted upon this coming December and January. Preliminary plans indicate that the coming program will be somewhat more extensive than previously. The campaign is financed entirely out of membership dues. The offices of the Institute of Bank Stationers are 120 Wall Street, New York City. Malcolm McComb is the Managing Director.

Because of the widespread and favorable comment which the campaign has evoked, the following four pages are being published to afford a detailed analysis and to illustrate fully the copy.

INSTITUTIONAL ADVERTISING CAMPAIGN AIMED AT STRENGTHENING CUSTOMER RELATIONS

By MARSHALL WOODBRIDGE

EDITOR'S NOTE: *Having followed the advertising and promotional campaign of the Institute of Bank Stationers for almost two years, the Editor of the* PHOTO-LITHOGRAPHER *concluded that an analysis of the campaign would hold considerable interest to advertising men, officials charged with public relations, purchasing agents, financial institutions and members of the graphic arts. A fairly detailed account is published in the belief that the basic principles have widespread applicability.*

THE advertising campaign of the Institute of Bank Stationers is unique in that its expressed purpose is to foster, as well as it may, the interests of others than its sponsors. Of course, in the long run it seeks to sell more and better stationery. But its emphasis from the start and which it has maintained throughout almost two years, making it worthy of analysis, is stated in the lines appearing on most of the copy, "This advertisement is sponsored in the interests of better relations between banks and the public."

It is really necessary to look a little bit into the background in order to understand the significance of the type of thinking this campaign represents. A few years ago the bankers of the country began to lay plans directed toward acquainting the public with the vital importance of the banking system to the nation. But the effort was directed not only toward making for a truer understanding of the importance of banking; it was aimed as well toward the humanizing of banking institutions. In short, the banks entered upon a nationwide public relations campaign largely under the sponsorship of the American Bankers Association and its educational subsidiary, the American Institute of Banking.

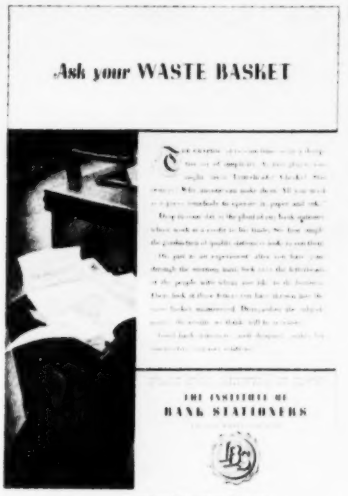
This was a vast enterprise. It was thoroughly well conceived and its execution has been and continues to be first rate. Its influence has permeated the many relationships which the banking system bears to the rest of the country. The program of the bankers has covered many fronts. Banks have been encouraged to advertise along new lines. The emphasis has been away from the stately and the unapproachable attitude which the public came to have a long time ago. To change these older attitudes, emphasis has been put upon the vital relation of banks to home, family and the business man; in other words, to show that the bank has a human tie to the community quite similar to that of the doctor, the grocer and the mailman.

In addition to telling their story through advertising and promotion, many of them have renovated their interiors, detailed officers to counsel with their clientele

on business matters and retained personnel experts to train their employees in handling people courteously and effectively.

This very important and valuable campaign had hardly gotten under way before the Institute of Bank Stationers realized that they had a definite, if limited, place in the picture. It was evident that they could make a real contribution to the work of their customer industry—the banks. Two things were apparent. First, that all banking transactions were reduced to forms, internal or external, the manufacture of which was their job. Second, the external forms, letterheads, checks, etc., reached many more customers and potential customers than the bank officials and bank staffs could by direct contact. It was obvious, therefore, that in a very significant sense bank stationery has an impression value which could help or hurt customer relations.

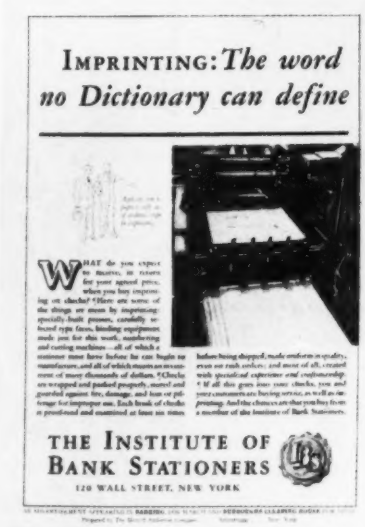
Bank stationery, it was evident, should not be overemphasized when bankers were more intensely concerned with questions of loans, investments, trust functioning, deposits and with the all abiding problem of constructive customer relations. Nevertheless, it was just as evident that there was a real job to be done, but a job that had to be done properly. Its success would depend upon good manners, good humor, good sense and perspective—which are all probably pretty much the same thing.



Bank stationers being in the graphic arts were keenly aware of the power which inheres in the printed page. They recognized, along with all printers and lithographers, what influence their craft can command for the success or failure of any enterprise. Yet the members of the Institute had to be very sure that their message was appropriately sent so that it would be properly received—"I fear the Greeks bearing gifts" is a good thought to bear in mind under most circumstances and certainly in launching a good will program.

The campaign has now been running for almost two years. In its first year it used only the medium of banking journals. The ads, which have appeared monthly, are reproduced on these pages. Inspection shows that the keynote has been a restrained telling of a story that was worthy of being put across without, however, any evidence of over-emphasis. In brief, bank stationery was only one of many problems concerning which a banking institution should have a policy. It was by no means the most important; but the ads keep repeating in a good natured and well mannered tone that precaution should be taken against jeopardizing the values of constructive customer relations thinking through a false economy which can develop a negative reaction on the part of unseen customers.

Checks and letterheads are important, vitally important to the bank. Their importance, however, should not and



need not be over-emphasized. Yet they have a job to do. If they fail, then to a degree at least, the whole policy of a progressive banking institution is impeded. In other words, the campaign is an economic justification for reasonably good quality as an adjunct to public relations. Obviously, this implies a higher money basis for what is being sold, but the advertisements have made plain that the members of the Institute are perfectly able, even if not willing, to compete on a price basis. They don't conceive of being able to do the best job for the customer if the dominant idea in a deal is price. Everyone realizes that by and large one gets what he pays for. Since the difference between cheap and ineffectual stationery and good stationery is so very small, there is the possibility of someone being penny wise and pound foolish. The sounder attitude was excellently stated by William H. Neal, Vice-President in Charge of Public Relations of the Wachovia Bank and Trust Company in Winston-Salem, North Carolina, in an article entitled "Good Stationery Builds Good Will," in the September, 1936 issue of *Rand-McNally Bankers Monthly*, where he writes, "Frankly, I think the economy movement went too far in many banks. . . . There are certain standards of quality in service and material which banks cannot afford to sacrifice if they expect to maintain public confidence and prestige."

While the emphasis of the campaign in the first year was almost entirely directed to the phase concerning the contribution which bank stationers are able to make toward constructive customer relations, the program during the second year has been more to acquaint bankers generally with something of the technical background which makes the service and quality which they require possible. In the second year, the campaign has also used the medium of direct mail. The plans for the third year, it is reported, call for an extension of the media.

Institutional advertising has occurred before and especially in the graphic arts. Lately many of the great industries, such as steel and the railroads, are entering upon institutional campaigns. This year has seen the rag content paper manufacturers engaged upon a vigorous institutional campaign. But the campaign program of the Institute of Bank Stationers remains unique in that it does not directly seek to sell commodities, but rather to impress that the customer, in this case the banks, has a vendor industry ready, willing and able to further, within its own scope, national aims toward constructive customer relations.

NEW YORK PHOTO-LITHOGRAPHERS ASSOCIATION HOLDS GENERAL MEETING

WILLIAM J. VOLZ, JR., retiring President of the New York Photo-Lithographers Association, was presented with an onyx desk set at the general meeting of the Association, held September 22, 1937.

In his report for the year, Mr. Volz reported the following activities:

1. A sales promotion endeavor on a self-sustaining basis, together with educational work and cost studies.
2. Exchange of credit information, consisting of distributing to members the names of buyers whose credit is not good or who make unreasonable demands on the photo-lithographers. This service has proven of great value in the past.
3. The Association is to continue to be active in assisting members and skilled mechanical help to secure placement within the membership.
4. It was determined that although the past year has been one of the most trying periods of the existence of this organization, nevertheless members have been served to very considerable advantage. There has been a marked improvement in trade practices.
5. During the past year considerable work has been done in connection with other trade association groups. Various trade and advertising groups have been addressed on advantages of using photo-lithography. The recent taxpayers' action against the City of New York is evidence that cooperation between trade associations should be continued. Although this work may not benefit any single photo-lithographer directly, it is of very definite benefit to the industry as a whole.

John Beith Smith, Jr.

The federal government and state bodies, together with organized labor, set up forms of legislation and demands which will vitally affect every plant in the country during the coming year. It is essential that the Association should begin to strengthen its position by:

1. Increasing its membership in order to be a fully representative organization within the area.
2. By working together more closely so that other trade associations may realize the progress that is being made.
3. Finally, to continue in the concerted activities upon which steady gains have already been made.

The directors feel confident that in the coming year there will be increased membership and greater income for the New York Photo-Lithographers Association.

The following officers were elected for the new year:

President—J. B. Smith, Jr., Photo Reproduction Corp., 100 Sixth Avenue, New York, N. Y.

Vice Pres.—Leslie Ward, Gray Photo Offset Corp., 216 East 45th Street, New York, N. Y.

Treasurer—A. J. Fay, National Process Co., 75 Varick St., New York, N. Y.

Director—Charles Nauheim, Photo-Litho Service, 145 Hudson Street, New York, N. Y.

Director—James Werblow, Polygraphic Co. of America, Inc., 310 East 45th Street, New York, N. Y.

John Beith Smith, Jr., the new president of the New York Photo-Lithographers Association, graduated from Cornell in 1910. In 1922 he entered the employ of the Eastern Printing Corporation, and in 1930 became manager. In June, 1932, he organized the Photo Reproduction Corporation of which he is secretary and manager. He is still active in the Eastern Printing Corporation. During 1937 Mr. Smith has served as treasurer of the New York Photo-Lithographers.

THE SUPERINTENDENT IN THE LITHOGRAPHIC INDUSTRY

ADAM HENRY REISER

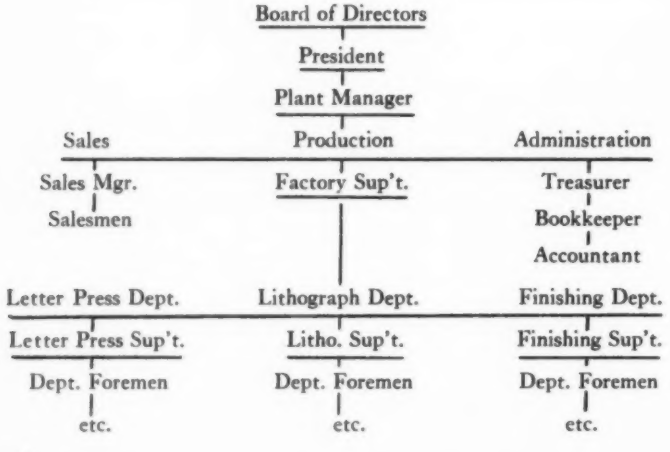
ONE of the best graphic representations of industry showing the different factors in their relationship to each other is that depicted in the adjoining triangle. This was called to the attention of a class in psychology and management by Professor F. Alexander Magoun, psychologist and human relations instructor at Massachusetts Institute of Technology. The base of the triangle is Labor, the left leg Capital, while the right leg (not to be pulled) is the Customer. Management, with its duty of interweaving the interests of Capital, Customer, and Labor, is placed inside the triangle.

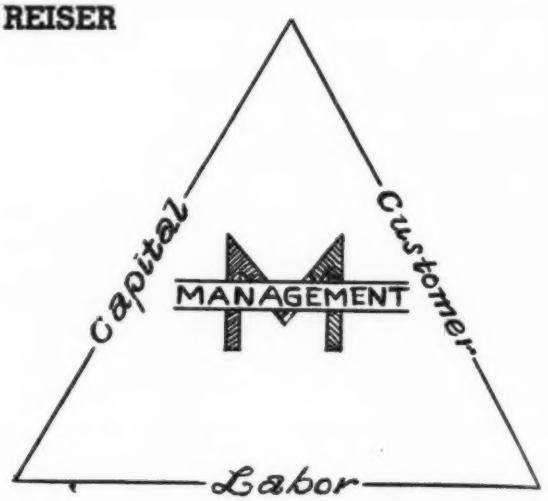
So that management may efficiently carry out its duties and properly care for each of the three factors of an industry, lithography or any other, there is a general division of management into the following forms:

CAPITAL	CUSTOMER	LABOR
treasurer	sales manager	planning department
bookkeeper	salesman	production superintendent
accountant	idea department	foreman
		personnel director
		mechanics

This holds true of any going business. It applies, for illustration, to the large plant where various methods such as lithography, letterpress printing, and finishing, are used to produce a finished product. In such a case, however, there will be a more detailed and complicated structure, but this will be built upon the same principle. One arrangement of these factors is illustrated below.

LARGE-SCALE MANUFACTURING STRUCTURE





From the foregoing we should get a fairly comprehensive and vivid picture of the superintendent's place in the scheme of things. But how about his requirements? What sort of ability must a man have to be a successful superintendent? Ask people in the different parts of the industry for their opinion on these questions, and be prepared for a wide variety of replies, many of them contradictory and confusing.

Conflicting Versions of Qualifications

For illustration, it is said: he must have bearing and appearance; a wonderful disposition; intelligence; foresight; resourcefulness; and have the ability to control workers. He must have adaptability; be able to organize; understand cost methods and accounting; must have tact; ability as an actor; be able to understand two points of view at the same time; and have a sincere interest in his workers. He must be revered and liked by his men. He must be stern; disliked by his men; a martinet, ruling with an iron hand. He must remain aloof from his men, only contacting them on business matters. He should mix with his men. He must have a sound theoretical knowledge of the business; knowledge of factory laws; trade union requirements; social laws and compensation laws; and laws of the particular state in which he is employed. He must never bend an arm to do any of the practical work of the men under him. He should pitch in and run a press, or make a press-plate, or even color-correct an art job when the occasion demands.

You have heard the "old man," as they call the super on occasion, panned because he couldn't do the work he had just requested someone to do. Or, you have heard another pan a super because he rolled up his sleeves and pitched in to teach, or to meet a promise of a delivery date, or to keep the wheels a'rolling. Why?

Why this confusion of ideas as to what a superintendent should do or know? The conclusions were probably arrived at in much the same manner as was the office boy's alibi. "I'm sorry I'm late, sir, I got up at 7:30 and looked in the mirror. There was nobody there, so I thought I'd already left for work. It wasn't till an hour later that I found there was no glass in the mirror." Surely, the question wasn't looked into very well, or it was answered in terms of self, tainted with personal experience. Let's tackle the books for some authoritative information.

What is a superintendent? Funk and Wagnalls defines a superintendent as one whose function is to superintend some particular work. Pulling this apart, we find that to superintend is to have charge and direction of; manage; supervise. Evidently not very specific, for that could be applied to every sort of a straw boss and still be correct. To manage is to engineer. An engineer is one who lays out, constructs, manages, or guides.

That places foremen as well as superintendents in the field of management. It calls attention to the first of Professor E. D. Smith's three points on running an organization. First, he places common responsibility. Second, the settlement of disputes at the level where they began. And third, the admonition that channels of education be kept open up and down, so that it may work up from the bottom as well as down from the top.

Three Main Branches

Analyzing all of the foregoing material, we arrive at this conclusion: There are three main arms to the service required of a superintendent. These are mechanical, personnel, and administrative.

Machinery figures in any undertaking today. It plays a tremendous part in our industry. The camera, whirler, plate graining machine, vacuum frame, photo composer, proof press, dot valuescope, densitometer, offset press, cutting machine, and a multitude of finishing machinery, such as folder, stitcher, creasers, not to mention typographical equipment, all come under the litho super's supervision. Surely, that implies some practical contact with the machinery involved.

Man power is still needed more or less to man this equipment. That introduces the human factor, which is also present in the third branch, namely, administrative factor.

Accurate records of many kinds prevent confusion and assure a systematic and scientific approach to problems of production, sales, and execution. The planning and routing of jobs which is such an essential part of supervision also comes under the head of administration.

Opinions vary as to the order of importance of these branches in the requirement scale; or the extent of knowledge or education required of a superintendent in each branch or arm of the service. An English works manager has said that a litho manager should be a glorified father of the family. Considerable stress is placed in many quarters on the desirable trait of leader as opposed to the old interpretation, driver. Successful superintendents are leaders and teachers. This implies power. But different from that employed by the foreman of a certain repair gang. A gang of men were working on street repairs in front of a woman's house. She seemed quite interested, and asked one of them, a big, burly fellow, "Which is the foreman?" "I am, Mum," he replied proudly. "Really?" continued the lady. "I can prove it, Mum," rejoined the fellow. Then turning to a laborer at hand, said, "Kelly, you're fired."

As someone has ably put it, "Genuine power is not coercive control, but co-active control. Coercive power is the curse of the universe, co-active power is the enrichment of every human soul." Mary P. Follett asserts there are four possible procedures in attaining this action. Of the four, voluntary submission, compromise, domination, and the interweaving of interests, only the last is right. To create this interweaving of interests so that the will to do is present, requires a knowledge of human relations.

Therefore, of the three factors of superintendency (they bear repetition) mechanical, human, and administrative, the human relations factor is by far the most essential as an aid to the executive of any rank toward getting his job done properly. There must be familiarity with the mechanical as well as with administrative details. But even the fullest knowledge of these will be of little avail in the long run without amicable human relations.

The material so far shows the tremendous scope of the subject. Due to this aspect it is manifestly impossible to treat it fairly and convincingly within the confines of a few pages. Thus far we have shown the structure of industry with the superintendent's place in the scheme of things. Through opinions and definitions we have arrived at three main arms of his service. Next month's issue will deal with the most important of the three, human relations. We will also decide and discuss the next most important. Questions on any part of this material may be sent in. These will be answered in the third and final installment.

PHOTO-OFFSET CAMERA OPERATIONS

By THEODORE S. HILLER

The Second of a Series of Articles on Camera Operations

IN my previous article, appearing in the September issue of the PHOTO-LITHOGRAPHER, I reviewed the following points:

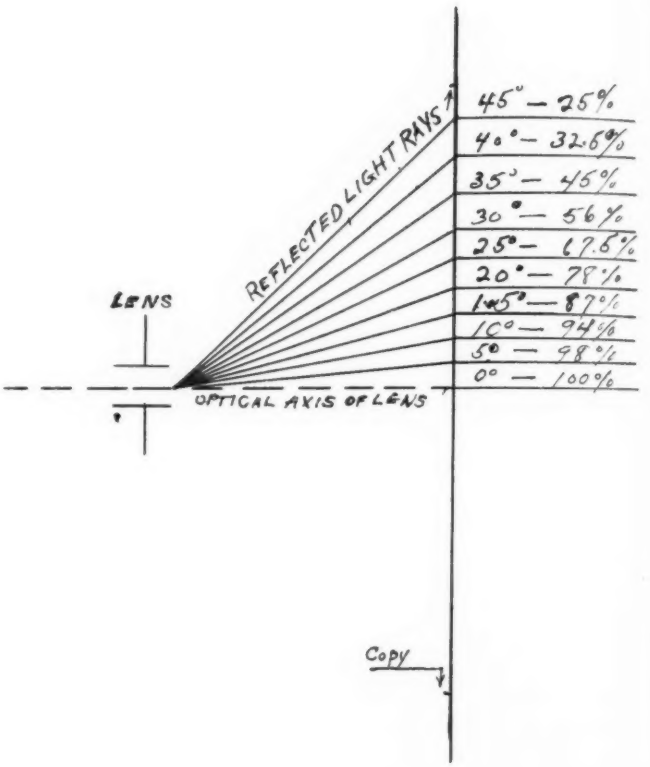
1. Photo-offset lithography is primarily a photographic method of reproducing line and continuous tone originals.
2. Photography is referred to as it relates strictly to photo-offset-lithography, a branch of the Graphic Arts.
3. The camera and its accessories should include certain important features.
4. The importance and method of obtaining a sharp focus and correct sizes.
5. The adjustments of the camera, lamps and lens, in preparation for the exposure.

In this article consideration will be given to exposure determiners, a table of exposure guides, a simple method of determining a basic exposure and exposure requirements in color photography and in halftone photography.

Correct exposure is dependent upon the following controlling factors, namely:

1. The photographic strength of the light emanating from the arc lamps. Ordinarily just candle power is considered when a comparison is made of the strength of the light rays, but in photography the actinic value or active color value of the light rays is also a deciding element.

The unimpaired strength of the light illuminating the copy depends upon the voltage and amperage of the electrical energy applied to the electrodes, and upon the amount of electrical resistance created between the carbon arcs of the lamp. The strength of the light also depends upon the length of the crater of the arc created by the application of electrical energy to the fusible carbons. This factor is affected by using a particular type of carbon in the lamps. Experiments have shown that the strength of the light is dependent upon the temperature to which the tips of the carbons are raised, and upon the gas created from the minerals contained in the filling of the carbons. Various intensities of colored light can be obtained by including such minerals as fluorides of rare earths, iron, nickel, aluminum and cobalt. The favorite carbon used in the Graphic Arts galleries is the white flame cored carbon.



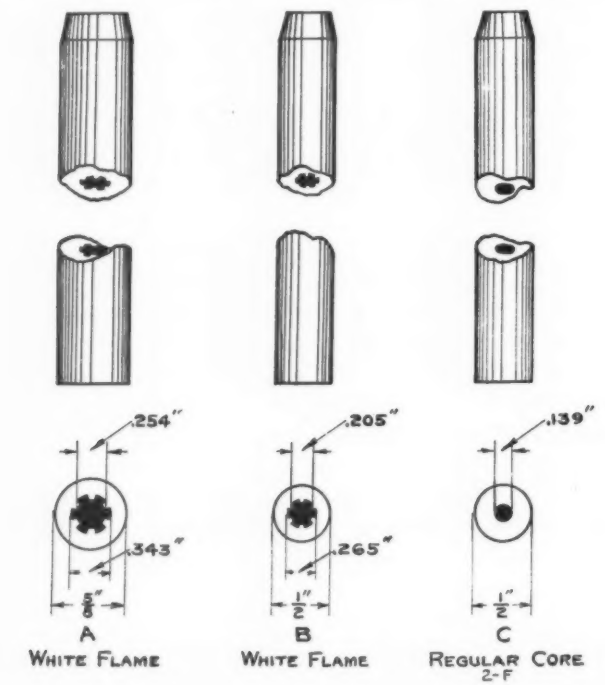


Illustration Courtesy National Carbon Company

The strength of the illumination further depends upon the type of reflector constructed behind the carbons and also on the presence or absence of a flare spot eliminator in front of the carbons.

Since exposure is dependent upon the strength of the reflected light, any change in the strength of the illumination will directly affect the amount of reflected light to a greater or lesser degree, as shown in the following diagram, when the angle of the illuminating rays is changed.

The strength of the illumination on an original varies inversely as the distance is varied between the light source and the copy board. The following table suggests the relative exposure required with each measured light distance after the normal exposure with the normal distance is ascertained by actual trial. This table is particularly advantageous when it is necessary to vary the light distance so as to produce even illumination on the entire original, whether it is a large or a small original.

As some of the modern cameras are now constructed with the lamps attached to the copy board, the light distance is standardized so as to produce even illumination on the entire copy board.

TABLE OF EXPOSURES WITH CHANGED LIGHT DISTANCES

Exposure	*Distances*										
¼	15	16	17	18	19	20	21	22	23	24	25
½	21	22	24	26	27	28	30	31	33	34	35
Normal	30	32	34	36	38	40	42	44	46	68	50
1½	36	39	42	44	47	49	53	54	56	59	61
2	42	45	48	51	54	57	60	62	65	68	71
3	52	56	59	63	66	69	73	76	80	83	87
4	60	64	68	72	76	80	84	88	92	96	100

Use of Table

1. To ascertain the correct exposure when the light distance is changed (a) Find the normal distance of the lights on the chart for the normal exposure with a normal copy. (b) Assume this distance to be 34 inches, as seen in the table opposite the word normal, the exposure for this distance, let us assume, is 30 seconds. (c) Assume the new measured distance is 59 inches, the new exposure will be 3 times normal exposure or 3 x 30 seconds. (d) The new exposure is 90 seconds.

2. Exposure also depends upon the amount of absorption and reflection of light by the original, also on the quality of the reflected light from the original. The reflected light is that which the background and the lines do not absorb.

Because the ordinary sensitive medium is most susceptible to the ultraviolet, violet, indigo and blue radiations, these rays are called actinic rays. The orthochromatic and panchromatic sensitive emulsions are actively affected by such colored rays of light as yellow, orange and red, in addition to the ultraviolet and blue. The exact degree of their effect will depend upon the particular spectral sensitivity of the emulsion and upon the transmission and absorption properties of the color filter employed in the lens. Owing to the fact that some emulsions are more actively affected by one set of colored rays than by another set of rays, exposures are made with these factors in mind.

Usually the photo-lithographic photographer uses regular and orthochromatic contrast sensitized mediums for his black and white negatives. Owing to the latitude of these mediums and the fact that their sensitivity runs quite parallel, the following exposures are suggested for normal white line copies.

It is customary to use the exposure with the camera set for same size reproduction, as a base for comparison. Assuming that open type single carbon arc lamps are placed 36 inches from the center of the original on the copy board and at a 30 degree angle to the axis of the lens. This distance is measured from the carbons to the center of the original.

Type of Medium	*F/ #*	*Focal Length of Lens*	*Time in Seconds*
Regular Film	F/22	18 in.	25–40
" "	F/22	19 in.	30–40
" "	F/22	24 in.	35–45
" "	F/32	18 in.	40–50
" "	F/32	19 in.	50–60
" "	F/32	24 in.	60–75
Orthochromatic Film	F/22	18 in.	10–20
" "	F/22	19 in.	15–20
" "	F/22	24 in.	20–25
" "	F/32	18 in.	20–25
" "	F/32	19 in.	25–30
" "	F/32	24 in.	30–40

The fact must not be overlooked that these exposures are only guides which the photographer may apply and alter to his own discretion.

3. The duration of the exposure is affected by the camera extension which is the direct result of any change in the size of reproduction, whether it is the enlargement or reduction of the original. Camera extension is the distance between the center of the lens and the surface of the ground glass, or the surface of the sensitive medium. Practically this distance can be measured from the diaphragm to the surface of the ground glass. As the camera extension changes with each change of reproducing size, exposures are proportionately increased or decreased, with all other factors remaining the same.

4. Exposures are further controlled by the size of the lens aperture employed. The exposure is inversely proportional to the effective lens aperture, i. e., the larger the aperture the shorter the exposure required to produce a suitable negative.

5. Exposures are lastly controlled by the focal length of the lens of the camera. Long focal length lenses require a longer duration of exposure to produce a satisfactory negative than short focus lenses.

Experience with a few exposures will definitely aid the operator in determining the working qualities of the lens and sensitive media with which he has to work. Although, as I have stated before, it is impossible to give correct data on exposures for any given set of conditions, a simple method for determining exposures can be employed which will aid the operator quickly to adjust himself in any gallery. The following steps are taken to determine correct exposures:

Place a uniform line copy on the copy board and adjust the diaphragm aperture to F/32 with the camera set at same size of reproduction. Make a series of exposures on a sample piece of the sensitive medium in use. By starting with an exposure of 5 or 10 seconds and increasing at intervals of ten seconds, allow a new strip of the sample piece to expose until the first exposure is equal to one minute while the last exposure is ten seconds in duration. After normal development, examination of this negative will reveal the underexposed, correctly exposed and the overexposed areas. The exposure for the correctly exposed area can be used as a standard for all future exposures, all conditions remaining comparatively the same. When the normal conditions are changed considerably, recognition must be given these changes and the exposures should be varied accordingly.

Experience will prove that standard production conditions will aid the operator to produce normally more satisfactory negatives. Standardization should be applied to such controlable factors as copy preparation, light angle, light distance, and stop size. With the other factors either known or controlled by outside agencies, the operator must apply his trade judgment. This is particularly true when photographing colored originals and halftoning a continuous tone original.

Color Separation Negative Exposures.

Although complete exposure data cannot be given for color separation negatives, because of the reasons stated before, an additional reason enters in this phase of photolithographic photography: namely, variations in the color of the originals. These color differences are due to methods and materials used when the originals are prepared. Because of these variations a filter is used in the lens as a means of compensation. Since the filter fails to transmit all of the light which the original reflects and to which the plate is sensitive, the filter necessitates an increase in exposure. The necessary increase is proportional to the amount of sensitivity of the plate to that colored light transmitted by the filter. Owing to the great number of filters on sale, and the variations of the dyes used, any suggestion of exact exposures would prove impractical. Therefore, the manufacturer includes a small card with his plates, bearing the filter factors for the emulsion on the set of plates. A definition of factor in this case is a common multiplier. These filter factors are obtained by actually testing the filters with each batch of emulsion and varying according to the differences in the sensitivity of the emulsion. The factors suggest at a glance the exposure required with a particular filter, by multiplying the exposure duration without a filter as a base. The following table represents the factors given on a card with panchromatic dry plates:

	No Filter	*Blue*	*Green*	*Red*	*Yellow (K3)*
Daylight	1	18	10	8	3½
Open arc	1	30	16	8	4
White flame arc	1	32	18	14	4

Use of Table

Assuming the correct exposure without a filter to be 5 seconds with white flame cored carbons. The exposure for the yellow plate, i.e., with the blue filter, would be 32 times 5 seconds or 160 seconds. The exposure for the red plate with the green filter would be 18 x 5 or 90 seconds and the exposure for the blue plate would be 14 x 5 or 70 seconds. The exposure for the black plate is usually made with a yellow filter, as K3 of the Wratten filter pack, and according to the table the exposure would be 4 x 5 or 20 seconds. Owing to the fact that each negative after development will bear an image of the part of the original reflecting the most light and transmitted by the filter, there is little chance for comparison unless a neutral color wedge or gray scale is photographed with each negative. A comparison of these scales after development will reveal to what extent the exposures were wrong.

Halftone negative exposures

The inclusion of the screen in the path of light rays from the lens to the sensitive medium necessitates an increase of exposure in order to produce a suitable reproduction of all the tones and the detail of the original.

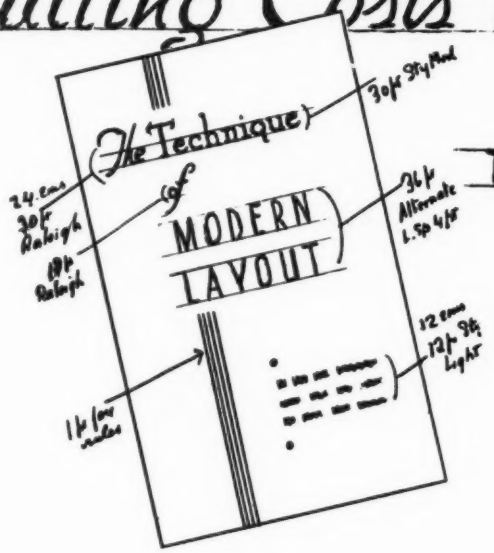
The usual practice in halftone photography is to utilize a number of lens apertures (stops) to complete a given exposure. The number of exposures varies from two, primary exposure and flash exposure, to four exposures, highlight, middletone, medium shadow and flash. The combined exposures are so regulated as to produce a negative suitable for offset press plate making. The qualities borne in such a negative are contrast, solid opaque dots, properly graduated dot formation and detail. The production of negatives which include the above qualities entails most of the factors mentioned with relation to black and white line photography, with the addition of such variables as:

1. Copy variations—contrasty, flat, normal.
2. Type of screen—100, 120, 133, 150 line screen.
3. Screen separation.
4. Type of negative required—drop out highlight, or normal halftone.

Since there is always some loss of detail in a halftone reproduction, detail seems to be the most important requirement of a halftone negative. The screen separation, the size of the stop used during the exposure and the length of exposure influence the amount of detail reproduced in the negative image. Because this image is made up of a graduation of dots surrounded by transparent spaces, justification must be made for the spaces by prop-

(*Continued on page 58*)

Cutting Costs AND Improving Quality THROUGH THE *WORKING LAYOUT.



By EDWARD · C · STERRY

WE lithographers install high-speed presses to pull down production costs . . . put in precision line-up tables and photo-composing machines, manned by skilled operators, to raise the quality of our work . . . continually preach quality to our salesmen . . . and then permit many orders to go into the composing room or offset department marked "nice job" or "make nice set-up." Then when the plant produces mediocre results the boss hits the ceiling. Why?

First of all, what is meant by a "nice job"?

Every conscientious compositor and every foreman in the photo-offset field with the remotest degree of pride in his work tries to turn out a "nice" job so far as he can interpret the word "nice." But unfortunately about only one operator or compositor in every ten knows what a "nice" job really looks like. This is not surprising when you consider that actual typesetting is a very mechanical operation. All you need to merely "paste up" an offset piece is a pair of scissors, some previously printed material and a paste pot (preferably rubber cement). That's all you need if you are not particular about the results the piece will produce. Most anybody can learn to "set" type, but it takes an artistic mind to select type appropriate to the subject, properly space it and finally give it that intangible "something" which makes it tops . . . that undefinable touch which turns cold type into a vital, dynamic selling force instead of a farce.

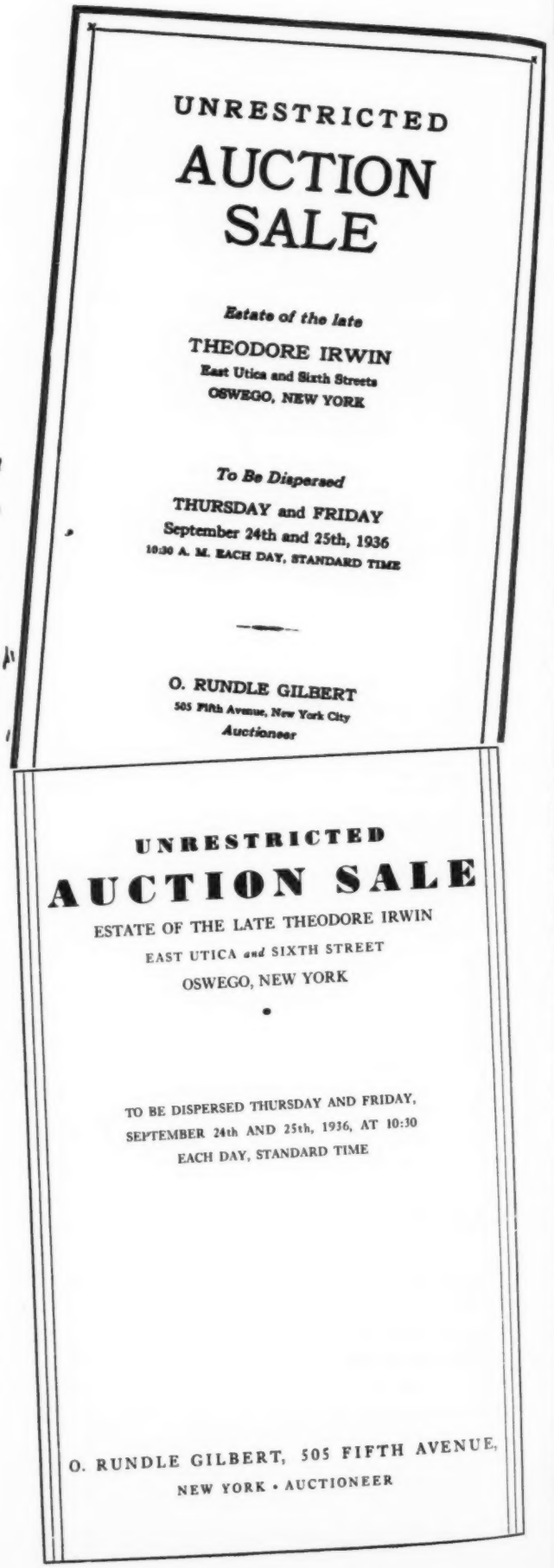
And by the same reasoning, most anybody can clip here and clip there, take a picture from this page and a decorative spot from another and weave the component parts into a comprehensive whole. But unless the hand that does the building has an artistic mind back of it with a keen appreciation of the elements that play upon the human emotions, causing the reader to act toward a sale, the offset piece that is built from clippings will doubtless fall by the wayside.

The working layout (virtually a working blueprint) is one of the best labor saving tools to be found both in letterpress and offset. But in order to be of any use it must be practical, and prepared by one who has a thorough knowledge of type faces, spacing, etc. He must know in a practical way just what can and cannot be done with printer's type and composing room material. A compositor with a working knowledge of display will often do a better job than one who attempts to make a layout with only an off-hand or theoretical knowledge of type.

I am purposely discussing the type layout first because many of our lithographers operate their own composing rooms and most of them have to deal with type set-ups in some form or other in the production of photo-lithography. Others swing more to the class of work built up entirely from art work, reprints or clippings. This class of photo-lithography also requires a practical working layout as a guide to production. So few compositors are able to put beauty into a piece of composition that calls for a beautiful treatment, or dynamic selling force into a piece that requires such handling. And it is really amazing how few artists are able to put that intangible something (salesmanship on paper) into their work. More and more photo-lithographers are realizing the need for furnishing their customers a layout service that will make their printed pieces produce greater results.

In my experience in building advertising pieces both in printing and the advertising agency field, I have found generally that the most dynamic layouts come from layout men inspired by salesmen, instead of from artists in the commonly accepted term. Unless you can find a rare combination of a skillful artist with the ability to put selling punch into the printed piece, your best layouts

The fourth in a series of articles on layout



Above is a practical working layout for a 6 x 9 (reduced) cover page. Including two or three trial thumbnails it required ten minutes to produce this layout and mark up type sizes. Inasmuch as working layouts are not presented to the customer they can be executed quite roughly. Caps, small caps and italics should always be sketched as such where required. Some layout artists make their layouts by tracing from a type specimen book. This technique involves a great deal of extra time and is not recommended. If the layout man is familiar enough with type, much time can be saved by first roughing out the design and then marking up the type sizes, if necessary referring to the type book.

Below at the right is an actual proof of the same cover page as it came from a compositor who set it up without a layout. This set-up lacks shape harmony. The groups of type have a horizontal contour while the page itself is vertical. The entire emphasis is given two lines resulting in no secondary display whatever. Ultra Bodoni and Caslon Light are obviously not good mixers. Type selection in harmony with the subject was not considered. The book deals with conventional and antique furniture, therefore an antique letter like Bookman in a conventional set-up is more appropriate.

will come from a layout man having a practical working knowledge of type together with some selling experience and a keen sense and knowledge of art, though he may not be able to actually draw pictures.

The practical working layout is the first essential in reduced costs because it is here that the printed or lithographed piece has its beginning. It is similar to building a house. The architect plans the structure, the contractor does the work according to specifications and the interior decorator puts on the finishing touches, or the illustrating as it were. The layout man constructs the piece (co-operating with the copywriter), the composing room works from the layout or "blueprint" and the artist pictures the product or service according to specifications. In the last analysis it is the layout man who should be responsible for the appearance of the finished piece. It is his work to build the structure, select the type, place the illustrations and see that the proper finishing touches are added.

The layout in the composing room is not only a great timesaver but it builds up the quality of the finished composition. With an accurate working layout before him the compositor seldom, if ever, has to reset lines.

A modern interpretation of the cover page seen opposite.

DO YOU WANT IT . . . OR DON'T YOU?

No trade paper performs its greatest service unless it renders a practical help to its subscribers in the way of reducing costs, improving quality and promoting sales. The Photo-Lithographer has always operated on this three-point program. We have ever been alert to the need of fresh viewpoints, new ideas and new departments. To this end we believe a specimen review department would furnish our readers some constructive help in improving their product and show the class of work others are doing. But it takes lumber to build a house and it takes specimens to conduct a specimen review department. These specimens must obviously come from our subscribers. If you think such a department would be helpful we will devote the necessary space to it each month. But . . . we need the specimens. Drag out your best samples and mark the envelope "Specimen Review." Such a department has proven helpful in other branches of the graphic arts . . . why not in photo-offset? Well . . . readers . . . do you want it . . or don't you?

And with the pulling of the first proof only a few minor corrections should be made with regard to spacing and arrangement. By the same virtue, accurate working copy or layout should accompany or be built into the jobs going to the offset department. All extra negatives should be clearly indicated. If these are intricate to any degree, contact prints or Vandykes should be pasted on the master copy as a definite guide for the stripper. All extra negative copy should be accurately scaled down and photographs cropped if necessary. All reproduction proofs from the composing room should be inspected for sharpness and unbroken letters before being accepted for paste-up. The layout man should inspect all paste-up material for being square, clean and free from excessive rubber cement. An excess of adhesive will materially increase opaquing time. In building up a piece for offset, contact prints should be made of all reverse portions and pasted on the art work. Ben Day screens should be laid on the art work rather than stripped into the master negative. In short, everything possible should be done at the art table. Unnecessary stripping or handling of negatives at the stripping table should be avoided. Nothing should be left to either the cameraman, stripper or opaquer that requires judgment of spacing, position or art treatment. Greater satisfaction to both customer and house will result if all this is left in the hands of an experienced layout man or artist responsible for the building of the piece and its final appearance.

The layout man himself does not of necessity have to be a pictorial artist. He can always find artists practicing a certain technique to illustrate a certain piece, but unless

(*Continued on page 59*)

SELLING PHOTO-OFFSET LITHOGRAPHY

THE EIGHTH OF A SERIES OF "BRASS TACK" ARTICLES

By WILLIAM WOLFSON

DID you see the article in the August issue of THE PHOTO-LITHOGRAPHER headed "Selling Without Salesmanship?" On the face of it, this seemed to refute the present installments of "brass tack" discussions on the subject.

Nevertheless, a careful reading indicates that the heading is not to be accepted literally. The author describes a salesman to be a pair of feet, brains, a voice and guts—*and more*. He declares a portfolio need not be carried—*but admits aids and accessories are useful.*

I like the part where he advises a salesman not to act as a salesman; and I have written my little piece about going beyond the conventional routine in selling. But I reject the thought that all a salesman need do is to make plenty of calls, let people know he is there to get orders, and he will get them. This smacks too much of the mistaken tactics of endeavor based upon the law of averages.

The law of averages is splendid when a so-called salesman is not proficient. He is bound to get something by calling upon as many new prospects as he can daily. That something, however, may be merely an opportunity to practice his art; and if he is not adept, he will lose business. Yes, let him carry a bundle of pencils or similar wares and he will find an occasional customer. He can even depend upon a sale out of a certain number of calls. Selling photo-offset lithography demands more than footwork.

As in other fields, there is no royal road to salesmanship. You may run across a series of booklets intended for salesmen in the graphic arts field recently published and called "Simplified Selling." Read them, by all means—but do your own thinking, and do not be misled by the title. This Cadoo System of Selling, too, might have had a similar catch-title.

Of one principle in selling you may be sure: *the greater your knowledge of photo-offset lithography, the better equipped you are to begin selling.* To enable you and your employers to acquire such knowledge is the primary reason this publication you hold and read was created. And now the publisher has issued a further work—a volume of three hundred and five pages—which is filled with authentic facts and information. It is called "The Photo-Lithographers Manual." It treats of sales, of production and of management. Secure a copy. *Study it.*

And now we come to the final elements of the Cadoo System of Selling. These are: Obvious Needs. Obscure Needs.

Obviously, when you encounter a business firm that places plenty of orders for such things as booklets, catalogues, folders, and various other forms of sales-promotional material and direct-mail their needs (or requirements) are known to them.

Law or Principle: Where orders are placed regularly as a matter of fact, the needs filled by such placing of orders indicates that the needs are known.

The difficulty where *you* are concerned is that other salesmen and other houses are already supplying the work that you are after.

Your task, then, is to influence and persuade so as to effect a shift to you and to your house.

The methods of accomplishing this have already been outlined.

It is possible to do so if your house submits estimates lower than that of the present suppliers. In fact, that is the only way some plants can get business. This situation has so many angles that I cannot go into them here for lack of space. But I call your attention to one phase of it: When photo-offset was not so well known, the photo-offset salesman was able to convince new prospects that substantial savings over printing were possible in many instances. Through that alone he opened many new accounts.

Where business firms already know and use photo. offset lithography, however, a different condition exists- It may be possible to offer better and quicker service, finer quality work, etc.

For example, your house may have a splendid art and copy preparation department. Or you may be qualified to render a peculiar service which enables you to secure business; actually to take it away from competitors. Again, your house may do both letterpress work and photo-offset; and this combination enables you to submit estimates on work done by letterpress *and* by photo-offset.

Your house may also do multigraphing, mimeographing, addressing, mailing, etc. On a simple combination black and white job, needed in a hurry, you can then suggest mimeographing, say, at approximately the same price, but you can promise delivery the same day without extra charges for rush work.

If your plant does photo-offset lithography and nothing else, there may be types of work your house excels in. This may be because of rare technical talent employed, special equipment such as web presses, two or more color presses, etc. It is up to you to stress these advantages; to go to prospects where these features will be appreciated.

Let us turn back to yourself. Assume that you devote a regular period of your time outside of working hours to study. You can be sure that the more you know of photo-offset lithography, the more intelligently you can discuss the problems of prospects. That is why I emphasize the importance of adding to your knowledge. You can always learn more. Even though your house is an exclusive photo-offset plant, it will help you to know all about printing, photo-gelatin, silk-screen, rotogravure and other methods of production.

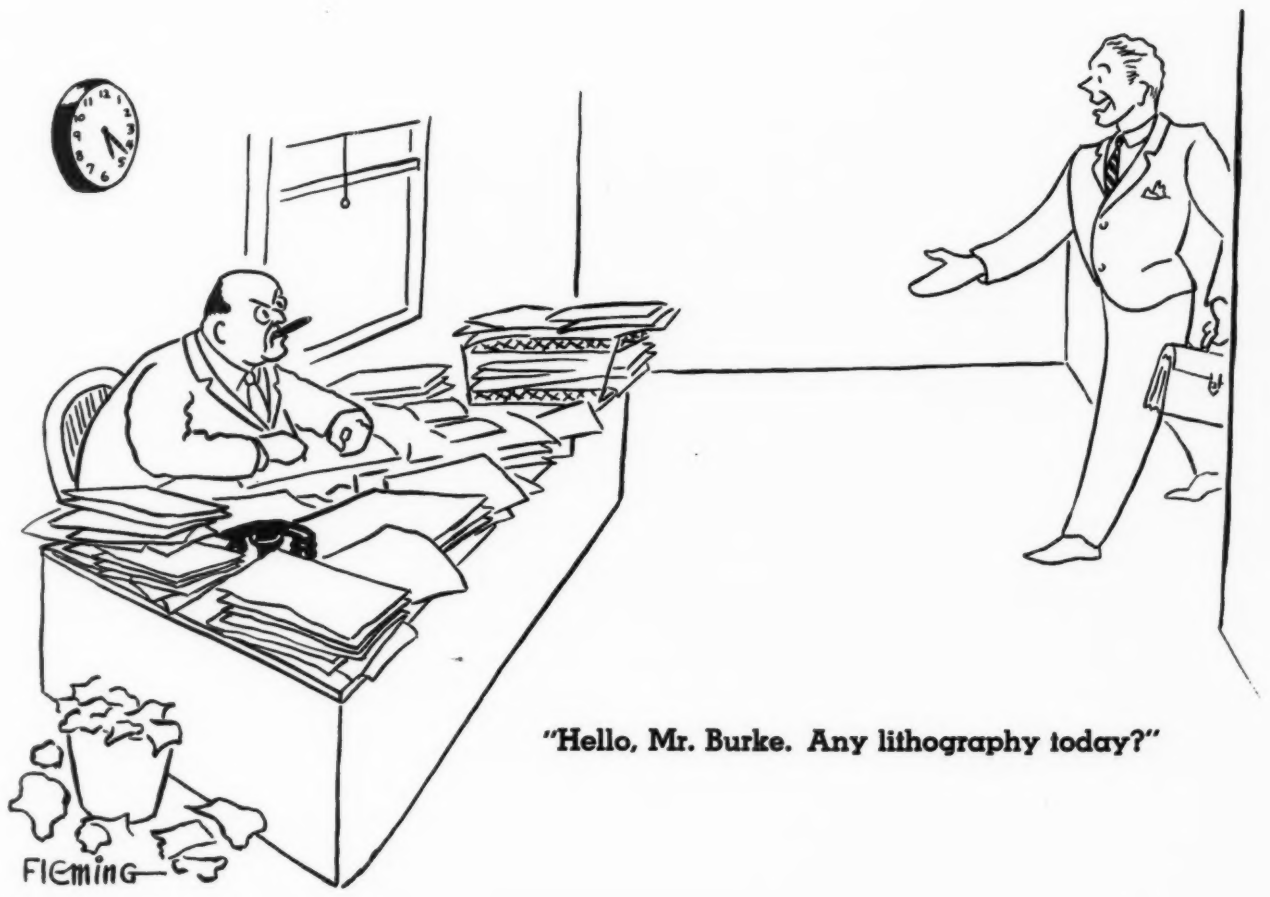
While it is true that no matter how much you know you can always learn more, and that such learning is a never-ending process, still there is recompense for the time spent. You are better equipped mentally. Through your knowledge you will obtain orders that would otherwise slip through your hands. If so inclined, you may eventually hold down a position as sales manager.

Dovetail demonstration while working upon the obvious needs of prospects and customers. In this installment you are provided with further ideas for demonstrative selling. Such demonstrations may be based upon your greater knowledge. It is possible through the building of such demonstrations, you acquire still further facts. (Refer to the color-kit idea.)

Base demonstrations, too, upon the skilled help, the specialties and the special equipment of your concern.

And utilize the principles of Contact and Acquaintanceship of the Cadoo System. Your sales record will soar. It is the hope of the writer that the sales record of many a salesman who reads this series is going up.

We need only to cover Obscure Needs and then these "brass tack" articles will be ended. One or two more installments will do the trick.



"Hello, Mr. Burke. Any lithography today?"

DEVELOPMENTS IN OFFSET INKS*

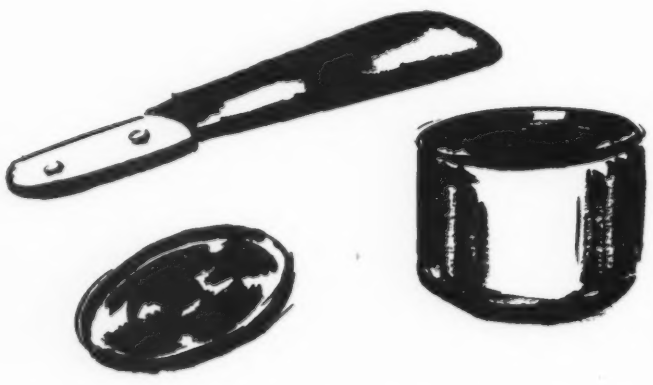
By JAMES BECKETT

Vice-president, The International Printing Ink Corporation

IN discussing the subject of developments in offset inks one automatically must think of the modern research laboratory. There was practically no pure research in the Ink Industry prior to the depression. I will not say that there was no development work done prior to that time, because each and every ink maker had its chemical laboratories where ink makers and chemists were doing their best to cope with progressive changing conditions. However, these men often had production problems which usually precluded them from attacking a problem in a scientific manner undisturbed by outside influences.

However, in the past few years, the ink industry as a whole has vigorously promoted scientific research. The successful research laboratory is divorced from any production problems and these scientific investigations must be carried out continuously and methodically. No immediate results can be guaranteed, but as time goes on the worth of such a laboratory is made more evident.

Research, to be successful, must be fundamental. The laboratory personnel must be selected with great care in order to have a well-balanced organization, an organization which knows thoroughly the problem that is being attacked and yet is open minded and not influenced by the methods of the past. As far as the ink maker is concerned, an ink has two component parts, namely, pigment and vehicle. Consequently in the average research laboratory there are separate departments, one constantly working on pigments and the other on vehicles.



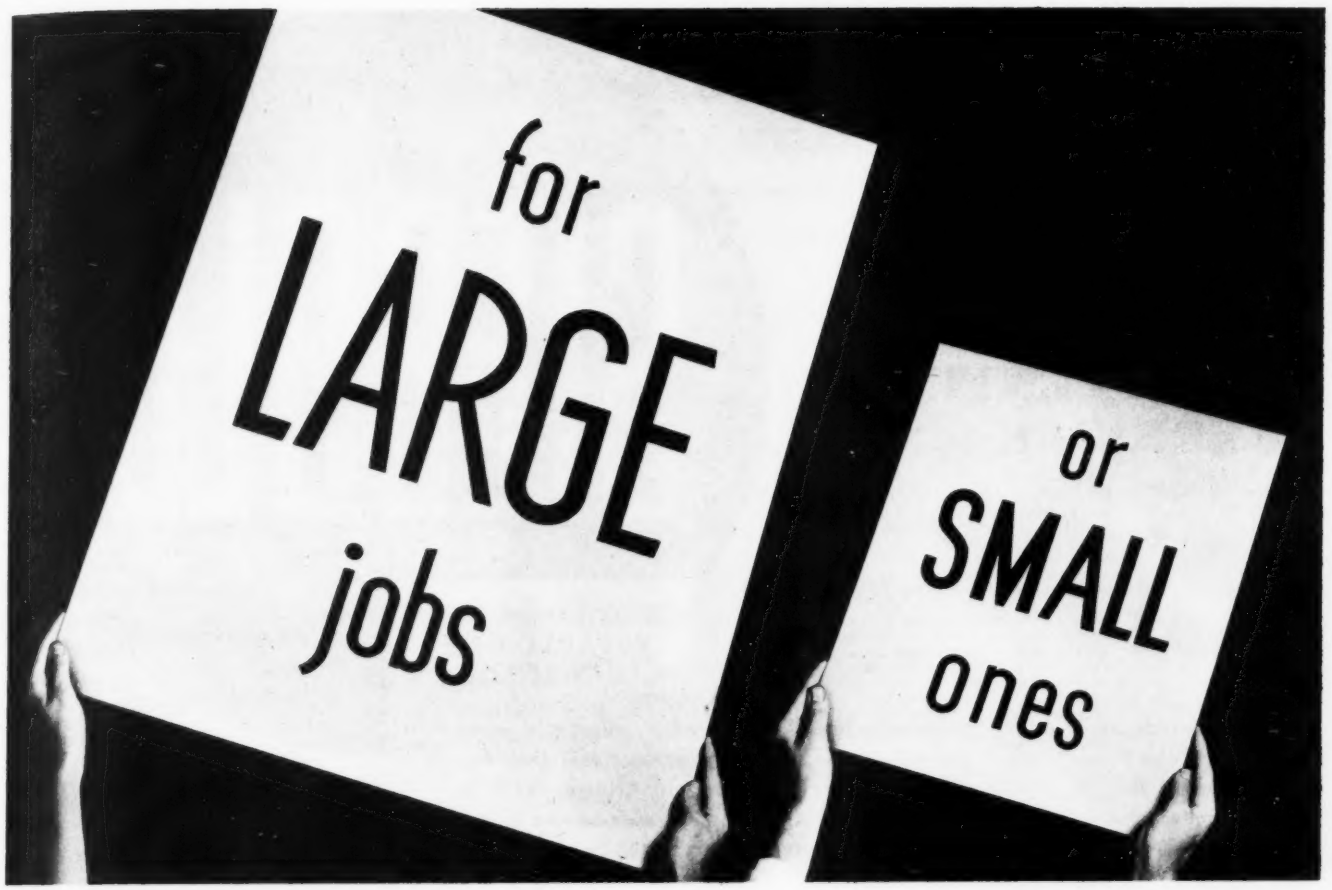
In the pigment laboratory they work in close collaboration with the dyestuff and pigment laboratories of large chemical houses or their own dry color plant. You, no doubt, remember that years ago permanent colors invariably were flat and lifeless. A few years ago the phosphotungstic colors were developed in purple, green, blue and red, all of them not only brilliant, but strong tinctorially and permanent and now being used extensively in better offset inks. More recent, and probably more spectacular, was the development by German chemists of the new Monastral or Syan Blue. This is an entirely new color, somewhat redder than Peacock Blue, extraordinarily permanent and strong, and acid and alkali proof. This, to my mind, is the outstanding pigment research contribution to the offset lithographer in the past fifty years. I understand that research laboratories are still working on the chemical construction of this blue, trying to perfect a greener shade blue which will more closely approximate the tone of Peacock Blue without losing any of the ink's original good characterstics. There are several other pigment developments and improvements which time will not permit me to discuss, but I feel sufficient development data has been given to assure you that the collaboration of the research brains of the ink, dyestuffs and chemical industries have resulted in new and better pigments for the printing industry.

The vehicle laboratory is probably the most important research laboratory of the ink industry because this is the component part of the ink which determines the printing qualities of an ink. From time immemorial offset inks have been made from vegetable oil varnishes. There are many vegetable oils in use but probably 90% of all offset inks in the years past were made from linseed varnish. Linseed oil, as you know, is expressed or extracted from flaxseed. Like any product developed by Mother Nature its physical and chemical characteristics vary with weather conditions. While the linseed oil crushers do a good job in blending this oil to maintain a close standard, the oil still varies in its drying, bodying and other important characteristics.

Therefore, the research chemists felt that a search should be made to find, or if necessary to design, a vehicle which would have all of the good points of linseed but none of its disadvantages. Because only chemical compounds can be made to exact specifications and maintained from batch to batch, they naturally turned to the synthetic resin field. This, of course, is a tremendous field for there are many kinds of synthetic resins. They may look similar but they act entirely different. Some are compatible with certain materials, while others are affected adversely. Some resins, while compatible with oil, emulsify or precipitate with moisture which, of course, means that a resin of this character would be unsuitable for lithographic work.

(*Continued on page 56*)

*From a paper read at the Eighteenth Annual Convention of the International Association of Printing House Craftsmen, August 10, 1937.



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ON request you can have any Eastman plate for the Graphic Arts, in any listed size, on 3/16" glass... with ground edges... with antihalation backing. There's no extra cost. And these same specifications are standard on sizes from 26" x 34" to 30" x 40". Four of the types supplied:

EASTMAN CONTRAST PROCESS PLATES ANTIHALATION Color-blind, fine-grain, and extremely contrasty. They're quick-drying and especially suitable for dot etching.

KODALITH ORTHOCHROMATIC PLATES ANTIHALATION Unsurpassed on jobs that call for negatives of extreme contrast on glass. Give the same beautiful photographic quality as Kodalith Orthochromatic Film.

"W&W" C.T.C. PANCHROMATIC PLATES ANTIHALATION Recommended for making direct halftone separation negatives from objects or colored copy. Yield superior negatives because of higher contrast and finer grain. Adapted to dot etching.

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Your Graphic Arts dealer will furnish any of these standard Eastman plates. Order a supply from him today.

EASTMAN KODAK CO. Graphic Arts Dept. Rochester, N.Y.

ORIGINAL COPY VERSUS QUALITY LAYOUT

By WM. A. MARKERT

Kopy Komposers, Bourse Building, Philadelphia

TYPEWRITING and typesetting practices were discussed in the previous article as affecting the quality of the final printing, and in turn reflecting on "more or less printing sales." Likewise proper layout and paste-up of all original copy present a most important step in the appearance of the final job. Comment has come to the writer to stress particularly the need of salesmen becoming more familiar with the preparation and layout of copy so that they can render a more worthwhile service to the lithographer's customers.

Of first importance is choosing the right spot, with good lighting, absolute cleanliness, and plenty of elbow space, instead of the out-of-the-way, dark corner so often "made to do," or "good enough." Salesmen and others are not inspired unless right conditions prevail.

Tools

In order to do any job well the proper kind of equipment is required. For those not familiar with the needed tools, it is worthwhile repeating. You will need:

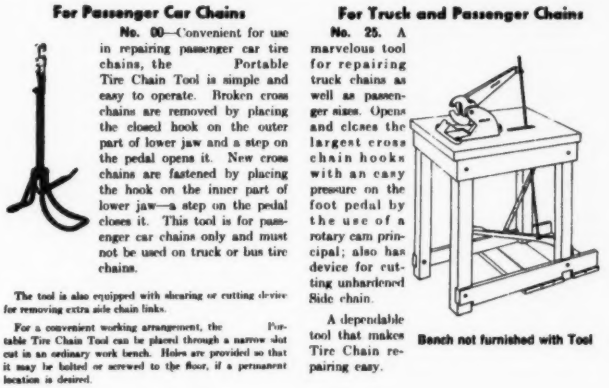
Drawing board, T-square, angles, and a french curve
Drawing instruments
A good black india ink
Chinese white or opaquing white
Gillot pens for touching up and small lettering
A set of speedball or drawlet lettering pens
White rubber cement (avoid the brown colored cement)
Fine and medium brushes for filling in blacks
Fine brush for cleaning up and opaquing out spots, smudges, rough edges, etc.
Scissors and "Gem" type of razor blades
Light blue "Eberhard Mongol" pencil or similar
Rule showing pica scale corresponding to the typewriter spacing of six lines or picas to the vertical inch
A good dictionary.

Layout

Reference is here made to the general layout of the copy. Many customers have their own facilities or drafting department so that the copy comes to the shop ready to shoot. In many instances, however, the photo-lithographer can be of invaluable assistance. It is therefore important that salesmen and representatives of the firm as well as those in the shop lay-out department *study and scrutinize* good *letterpress* practice.

Margins and White Space

The average person untrained in laying out copy seems to want to get into a given space as much copy as possible, crowding it out to the edge of the sheet, as well as going beyond reason in reducing copy as is illustrated. They



For Passenger Car Chains

No. 00—Convenient for use in repairing passenger car tire chains, the Portable Tire Chain Tool is simple and easy to operate. Broken cross chains are removed by placing the closed hook on the outer part of lower jaw and a step on the pedal opens it. New cross chains are fastened by placing the hook on the inner part of lower jaw—a step on the pedal closes it. This tool is for passenger car chains only and must not be used on truck or bus tire chains.

The tool is also equipped with shearing or cutting device for removing extra side chain links.

For a convenient working arrangement, the Portable Tire Chain Tool can be placed through a narrow slot cut in an ordinary work bench. Holes are provided so that it may be bolted or screwed to the floor, if a permanent location is desired.

For Truck and Passenger Chains

No. 25. A marvelous tool for repairing truck chains as well as passenger sizes. Opens and closes the largest cross chain hooks with an easy pressure on the foot pedal by the use of a rotary cam principal; also has device for cutting unhardened Side chain.

A dependable tool that makes Tire Chain repairing easy.

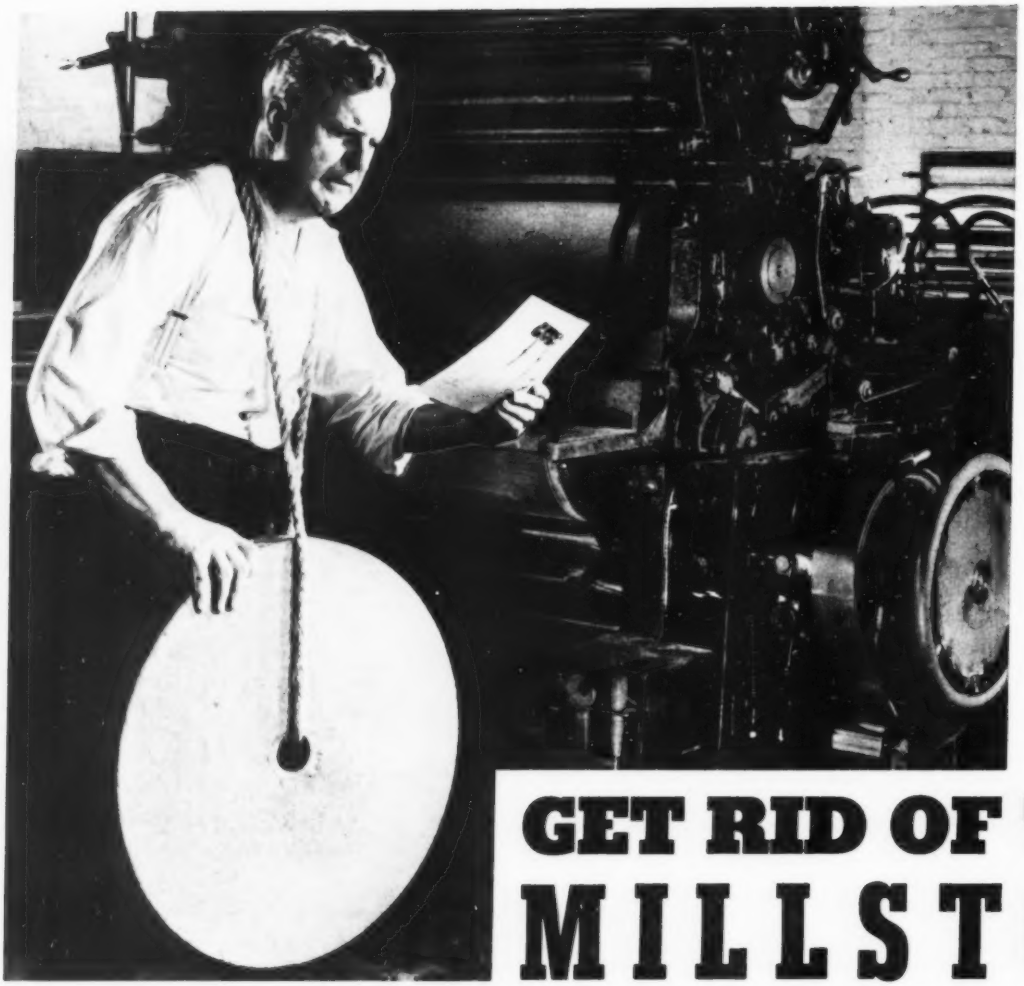
Bench not furnished with Tool

Actual size taken from a supply catalogue. Are you interested in reading it?

think that the prospective reader will actually go through this mental effort, whereas the fact is that the more crowded the page and the less white space between and around lines, the *less* favorable attention and interest will it arouse. Crowding the sheet to the very edge, just because the lithographer can do it more economically, is neither good sense nor good practice. Let it again be stated that because photo-lithography is very flexible in its application it does not justify the violation of good principles of design, layout, or typography.

We have always regarded our catalog as our most important piece of sales literature. That is why we spend so much time and money in making it the best in the field. Also, to top things off this year, we plan to print and distribute MORE THAN TWICE AS MANY COPIES. Add this to the fact that the new Catalog will be twice as effective as ever before and -- well, it spells GOOD BUSINESS for

The copy stands out in this column because of the white space surrounding it. More white space makes for more attention and interest.



GET RID OF THE MILLSTONE!

People sometimes tie millstones around their own necks — and then wonder what holds them back!

Millstones don't, of course, *look* anything like rollers, but the wrong offset rollers *act* mighty like millstones hanging around a printer's neck. They keep him from turning out offset jobs of quality. And they keep him from turning out even this mediocre work in the time he should in order to beat present-day competition.

It might pay these printers to look into Litho-Print Rollers. True, they're new, and they look and feel "different." But they've been proven practical and economical — valuable aids in the production of finest lithography — at a profit.

There's no sense in keeping outmoded rollers on your presses when it doesn't cost any more to have the best. Why make it hard for yourself? Why try to run your business — turn out good work — with a millstone around your neck?

SAM'L BINGHAM'S SON MFG. CO.

ATLANTA
CHICAGO
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MINNEAPOLIS
PITTSBURGH
SPRINGFIELD, O.
OKLAHOMA CITY

PACIFIC COAST REPRESENTATIVES:

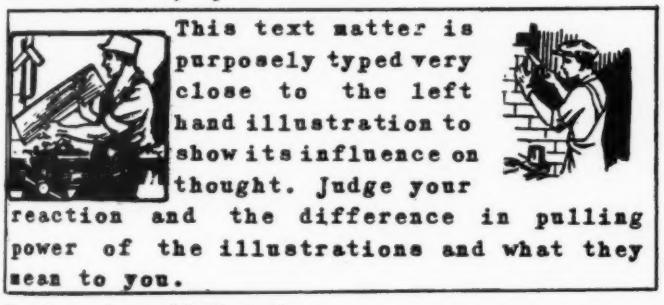
CALIFORNIA INK COMPANY, INC., San Francisco, Los Angeles, Portland, Seattle, Salt Lake City

On a standard unit size page of 8½ x 11 inches, good practice will dictate a margin on either side of five-eighth or three-fourth of an inch to one inch, with the top margin of about three-fourth to one inch, and the bottom a bit wider than the top. Side stitching, wire stitching or punching will of course affect the margin on the binding side. Measure and study the average good catalogue or magazine page printed letterpress and be governed by its good principles of typography. The page, when held off from one, should give a pleasing balance and be properly proportioned.

Where typewritten copy is reduced more than 20% on pages wider than six inches, text matter should be made up in two columns, rather than in one width. Notice magazine pages and try to imagine reading them in comfort if written in one column width instead of the two or three. It is extremely tiresome and causes severe eye-strain to read long lines of copy.

Use of Half Tone Illustrations

Where half-tone or line illustrations are carried, it is always best to allow a noticeable margin of white space, and not carry the typeset or typewritten matter close to the edges. Study should be given to the proportion of the illustration and the surrounding text, so that the illustration does not appear so large as to relegate into obscurity the message accompanying the picture. On the other hand the picture should not come under an abnormal reduction, so as to lose its purpose and value.



Text is too close to left illustration.

It is naturally desirable to economize by the use of half-tone illustrations from previously printed pages, bulletins, catalogues, etc. Again a genuine service can be rendered to customers by showing them how extensive reductions of such half-tone proofs result in bringing the dots together and the final reproduction showing loss of detail, and dark, smudgy, spotty effects. There is no economy in this kind of reducing since it vitiates the purpose of the illustration (that of interesting the eye) and may even cause prejudice or loss of interest in the article. The engraving profession has made this "poor reproduction of half-tone pictures" their point of attack and rightly so. When the photo-lithographer makes it his objective to improve half-tone reproductions, he will not be subject to this universal criticism and the resultant lack of the better and more profitable work.

There are many things left to the photo-lithographer, in which judgment must not only be used by those in the preliminary lay-out of the original, pasted-up copy, but by the personnel in the shop, where negatives are arranged, laid out, inserted or stripped. Prize those particular customers who are complaining about the make-up of the final work, for they are teachers who help to step up the quality coming out of your shop.

Paste-Up Work

Good paste-up work on the original copy is of invaluable help to the production department. The camera man is not compelled to wrestle with peculiar copy, thereby adding to the labor cost of the job; those who do the opaquing are not compelled to stand on their heads trying to decipher what is and what is not copy; the plate department can concentrate on turning out good clean plates instead of trying to decipher whether the job has been properly handled; and the pressman is not made to guess and wait for interpretation of instruction and copy.

The kind of rubber cement and how it is used plays its part in reproducing. Ordinary tire rubber cement is of a brownish color and photographs dark gray, necessitating unnecessary intricate, tedious opaquing. It means labor cost and slower production in removing all shadows and edges around pasted-up copy. White rubber cement is available in various types of containers.

The use of "any old triangle or T-square" results in improper alignment of captions, typeset insertions or corrected typewritten matter.

Slovenly pasted down copy with loose edges and corners sometimes causes unnecessary labor in the opaquing department. Where there is little white space, care must be taken in trimming. Cementing down will facilitate the handling of copy in the shop.

Where lines are drawn in india ink, or pen work is necessary, make certain that all rubber cement has been removed from the paper before applying the ink. India ink will not flow smoothly over cement covered surfaces, and when the copy is gone over and the cement rubbed off it carries with it the ink impressions, leaving open, broken and ragged lines.

It is absolutely necessary to remember at all times not to allow rubber cement to get on newly typed copy since rubbing off the cement will carry the fresh inking with it, and leave light gray and uneven tone impressions. The camera simply will not be deceived, and will not correct non-uniform copy.

When it becomes necessary to patch and correct very small areas, the best method is to apply the rubber cement to the back of the corrected copy, as well as the surface of the master sheet, thus causing a double binding and insuring better adhesion. Otherwise the handling and shuffling of the copy may flip off the correction patches and cause the improper copy to be reproduced.

(*Continued on page 59*)

ESTIMATING

By SIMON J. WORMS
Public Accountant

THE term "Estimating" is one which may be defined as the act of forecasting or foretelling the probable outcome or result of a particular venture or undertaking. One may estimate the value of a product in the economic sense or the cost of producing a product in the commercial sense. I shall attempt to discuss this term as it is applied in the commercial sense, and particularly in the lithographic industry.

The work of estimating in a lithographic plant devolves itself upon an individual known as an estimator. The position of estimator in a lithographic plant is one of enormous responsibility and great significance. The estimator must be well versed in all the technicalities of the reproductive processes, the material costs, the labor costs, and the overhead charges. Some of the duties and qualifications of an estimator may be listed as follows:

1. To determine the most economical and most efficient way of producing the order.
2. To know the approximate time required for all operations and the hourly costs thereof.
3. To know the proper materials which may enter into a job and the costs thereof.
4. To be able to read and interpret cost figures.
5. To include a profit on each job.

Each prospective job must be analyzed minutely by the estimator, in order that all the elements of cost will be included in making the estimate. The basis for the estimate is usually a request for a quotation by a customer. This may take the form of a written request by the prospective purchaser, or, it may be an oral one by the purchaser to the salesman who has solicited the business.

In either case, accurate and prompt attention should be given to the request. Also, the estimator should secure or make up full specifications for the job so that he may estimate on the proper type of work desired. The estimator should verify and check each item carefully. The desire to secure an order should not influence the estimator in the matter of figures or the estimated accurate time of producing the order. Each estimate should be given in writing and should state the complete specifications upon which it was figured. If the job is secured, the actual costs of the order should be compared with the estimate to note any discrepancies.

There are, of course, various other elements which must be considered in making the estimate. Some of these factors are:

1. The quantity of the material desired.
2. The type of lithographic product ordered.
3. The question of special or combination work.
4. The question of whether the order can be completely finished within the bidding company's plant.
5. The work operations involved to complete the order.

Let us discuss some of these factors and see what effects they may have upon the preparation of the estimate. Accuracy and thoroughness are important elements to be considered in preparing the estimate. Every possible development in the manufacturing of the product such as unforeseen delays, failure to secure paper and inks, or failure of power supply should be considered.

1. *Quantity.*

This factor in the preparation of the estimate is an important one. The quantity desired will affect the method by which the product may be run. It may be possible to run the job in a combination form with other jobs, providing the paper and inks, and certain other specifications are coincidental also.

Then, again, the quantity may not warrant a combination form and the job might necessarily have to be run alone.

Another consideration is the question of whether the job may or can be run one up, two up, or more up on a sheet. The quantity will decide this and thereby affect the cost figures ascertained in the estimate.

2. *Type of Lithographic Product.*

The type of work to be done is a deciding element in making up the estimate. There is such a variety in the types of lithographic products which may be manufactured that it would be practically impossible to mention all the types of products. However, we know that there may be periodicals, books, labels, letterheads, folders, broadsides, displays, office stationery and envelopes, maps, and posters. In each case, the type of the product will affect the cost to be included in the estimate.

Each type of product has its peculiarities insofar as papers, inks, color combinations, plates required, and the number of plates and processes to be utilized in producing the finished article. In this respect, care should be taken to provide for all the manufacturing processes which are necessary to complete the job outside of the actual lithographing of the work to its finished stage. Some of these additional processes may include varnishing, die cutting, mounting, embossing, pebbling, binding, folding, cutting, perforating, collating, or any of the other processes which may be necessary to place the product in its finished state. In this respect, that the costs of handling the stock and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LOWER ROLLER COSTS
AND BETTER PRESSWORK
Equipment which gives you a better job usually costs more than the ordinary equipment of its kind. In the case of Vulcan Litholastic Rollers, however, the over-all cost is substantially lower. You get better inking qualities and, therefore, better presswork . . . and at the same time you get much longer service and lower costs.
Litholastic Rollers are unaffected by heat and cold . . . impervious to oil and driers . . . and free from stickiness, swelling and shrinkage. They have — and maintain indefinitely — just the right amount of "tack" for best ink distribution. For printed matter please address Vulcan Proofing Company 57th Street and First Avenue, Brooklyn, N. Y., or 608 South Dearborn Street, Chicago. Sales representatives in principal cities.
Vulcan LITHOLASTIC Rollers

transporting the stock to and from the finisher, if it is not done within one's own plant, should necessarily be included in the estimate.

3. *Special vs. Combination Work.*

The question of whether the job should be run in combination form or as a special form will depend, as previously stated, upon the size of the order. Also, to be considered are the factors of inks, type of paper desired, and the finishing to be done.

In some cases, it may be feasible to run certain jobs together in combination form, providing the papers, inks and quantities are homologous; whereas, in other instances because of a variance in one of these factors, it will not at all be possible to run it in combination form. If a combination form is possible, the costs of the job will necessarily decrease and there is more likelihood of securing the order.

If a combination form is not possible, each job will be figured as a special run with all of the incidental and additional costs attached thereto. Special runs will usually cost more and must be figured very accurately.

4. *Completion of the Job.*

The question of completing the job in one's own plant or of sending the job out for completion is one of vast consequences in estimating the proposed order. If the job can be completed within the scope of the plant's activities, then the costs of placing the product in its finished state can be well estimated by virtue of the cost records maintained within the plant. However, if it is necessary to send the work out to be finished, another procedure must be adopted.

If the work is sent out to be finished, bids will have to be secured from these outside sources who will finish the job. These outside sources will quote a price for their part of the manufacturing process. Naturally, the prices quoted by these outside sources may vary. The lowest price may not always be the best price for there are always the restrictions of quality, delivery, and workmanship to be considered. However, after due deliberation has been given to these factors, the price to be used in figuring the estimate may be determined. It is advisable to secure this quotation in writing from the supplier so that there will not be any discrepancies at any future time regarding the quotation and it will also tend to check your figures as inserted on the estimate blank.

5. *Work Operations.*

Each job should be carefully studied to determine the number of additional work operations or processes entailed in the completion of the product. These should be listed and the costs for each carefully inserted and included in the estimate.

Each job may, or may not call for various work operations which are not in the usual run of work and which entail additional costs. For instance, it may be necessary to make new plates, make new negatives, change or correct a previous negative or plate, submit various proofs, make a new layout or a new sketch, etc. In any event, the costs of these additional operations should be carefully noted and estimated.

All of these factors should find themselves ultimately in the form of cost figures on an estimate blank. Some of these essentials of an estimate form are:

1. Correct name and address of the customer.
2. The date at which the estimate is made and the number thereof.
3. The name of the salesman who handled the inquiry or will handle the prospective customer.
4. The quantities desired and the final correct size of the product.

5. The specifications of paper and inks to be used in manufacturing.
6. The costs of layout, art work, typesetting, press plates, proving and special proofs, etc.
7. The costs of the presswork.
8. The charges for paper handling, storage, packing, shipping, and cutting costs.
9. The application of general overhead charges and provision for contingencies.
10. The insertion of the profit figure and final quotation price.

a. Be certain to insert the correct name and address of the customer in order that you may send the quotation to the proper company and place. Also, if possible, secure the name of the individual who requested the quotation so that you may address your letter to him and also have his name on file for future reference and for future advertising mailings.

Also, if the correct name is inserted, future reference to this quotation may more readily be made.

b. The estimate should be clearly dated and numbered as a proper reference folio. In the case of a future reference to a quotation or a new request for a quotation, the original estimates and any succeeding estimate may be easily found.

It is advisable to number the estimate so that if the order is received, the estimate number may be inserted

NEW SAMPLE BOOK

The LEADERSHIP OF BECKETT COVER in the field of lower cost cover papers is further emphasized by the enlargement of the color range and the addition of new finishes.

It is one of the easiest surfaces in the world to print and entire uniformity of the two sides adapts it perfectly to any press procedure or any type of work.

BECKETT COVER is stocked in all regular sizes and weights in antique and ripple finishes, and in eleven striking colors and white. Special finishes are speedily available.

Correct and appropriate color combinations for printing on BECKETT COVER and description of the inks suggested may be found on each page of this new Sample Book.

Ask for your copy today by addressing

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Telephone CAledonia 5-5260 to 5268

upon the job order form in the office for possible cross-reference and comparison of the actual costs after the job has been completed.

Also, a numerical record of all estimates may be kept so that the management or sales manager may see what jobs have been realized on the estimates submitted and which have not been realized. A list of these estimates and the specifications thereof which have not culminated in orders may be submitted to the sales department and they may attempt to follow-up these estimates with a letter or a personal call. In this way, they may ascertain the reason for the non-receipt of an order and also act as a stimulant for action upon the part of the customer. It may act as a form of entry into the customer's establishment or it may inform us why we failed to secure the order. This information may then be written upon the estimate for future reference.

c. It is advisable to include the name of the salesman involved in the estimate both for future reference and in determining the orders for which the salesman is to receive a commission or special remuneration.

d. The exact quantities desired should be determined and inserted on the estimate blank. Also, the correct size of the finished job should be carefully noted, since the original copy or original sketch may be larger or smaller than the correct size. Great care should be exercised in determining and inserting the correct size for this is one of the most important requisites, both in figuring and completing the order.

e. A detailed record should be made on the estimate blank of the number of colors to be used on the job. Consideration should be given to the possible colors which may be secured by the combination of colors and also to the special colors which may be required.

The paper problem is another element worthy of serious thought. The selection of the paper stock is dependent upon the type and kind of job, the size of the sheet to be run, the colors to be run, the delivery which may be secured on the paper order, the price of same, and the specifications which the customer may supply. Due consideration should be given to the delivery wanted on the estimate and the time involved in securing the paper and seasoning it.

f. The costs of layouts, art work, retyping or typesetting, press plate proofing, special proofs, opaquing, tusching, binding, finishing are some of the work operations which may be involved in the job and, as such, should be included in the estimate, Careful analysis of the proposed job should be made at the time of preparing the estimate to definitely determine which of these costs must be included. Some of these operations may not be performed within one's own plant. It will then be necessary to secure quotations upon such outside work and include those figures in the estimate.

g. The item of presswork to be included on a particular estimate is a consequential one. Therefore, it should be given careful and accurate foresight in figuring on this cost. It should include the estimate press running time, make ready time, and wash up time. The number of colors to be lithographed, the kind of colors to be used, the paper to be used, the urgency of the order are all elements having a marked effect upon the cost to be included.

Unforeseen delays and spoilage may, or may not occur in running the job. Provision for costs of this kind should be included to some degree.

h. Suitable provision should be made on the estimate form to include the costs of paper handling, paper storage, and paper cutting costs where they may be readily related to a particular estimate. If not, a percentage of the paper cost or a rate per thousand ordered or per thousand sheets may be included in the cost.

The costs of shipping and packing may also be figured on an actual basis or a definite figure on the basis of the quantity ordered.

i. Provision should be made to add to the manufacturing cost, as finally determined, a percentage representing the costs of general factory overhead, selling expenses, and administrative expenses. In this manner, each job or estimate will properly carry its share of the overhead burden.

One might also include at this point a provision for contingencies which may arise at a later date, such as unforeseen press costs, plate costs, idleness costs, increases in the prices of paper or inks, increases in the costs of various supplies, or increases in labor costs. There should be some provision made for this in order that the estimate will be as truly representative of the actual cost as it is humanly possible to predetermine.

j. Naturally, the final element will be the factor of the profit figure to be inserted and the quotation or selling price determined. The policy of the amount of profit to be added is one for the management to decide.

A standard practice may be adopted whereby a certain percentage is added to the total cost as determined. However, this may not always be feasible since the quotation may be given in the face of strong competitive forces and a close buying policy by the customer. Also, the general business as well as market conditions may warrant a deviation from this policy. In any event, the quotation or selling price should include a profit, be it large or small, but should not in any circumstance be quoted at a loss.

Thus, we may see the various components of an estimate for a lithographic product. Each should be carefully scrutinized and figured. After the estimate has been completed, it should be carefully checked and initialed again by a responsible party to definitely determine that all the elements of cost have been included in the estimate. He must also ascertain that the selling price, as finally figured, will result in the acquisition of a profit for the company, and not a loss.

A specimen estimate form is shown on page 39.

Best for Long Runs...

It takes unusual qualities in paper for the last thousand impressions of a long press-run to look equal to the first. But Cantine's Coated Papers *have* these qualities, developed through 49 years of manufacturing experience. Cantine's uniformity, materials, formulas, control and finish definitely reduce press-delays, wash-ups, wear of plates and spoilage. Use the Book of Cantine's Coated Papers and Advertising Information—and specify the grade made for your requirements. The Martin Cantine Co., Saugerties, N. Y.—Specialists in Coated Papers since 1888.

A Valuable Book

To Have and Use

Cantine's COATED PAPERS

Estimate Sheet

NAME OF CUSTOMER _____ DATE _____

ADDRESS _____ NO. _____

INDIVIDUAL _____ TEL. _____ SALESMAN _____

QUANTITY	SIZE	COLORS	PAPER	DETAILS

Method of Manufacturing

☐ SPECIAL ☐ COMBINATION

Outside Work

DESCRIPTION	VENDOR	QUOTATION
	TOTAL	

Bindery Operations

	TIME HRS.	TIME MIN.	COST	
FOLDING				
COLLATING				
STITCHING				
PUNCHING				
SEALING				
TOTAL				

ESTIMATED BY _____

ESTIMATE CHECKED BY _____

DELIVERY DATE _____

Operation	TIME HRS.	TIME MIN.	COST	
Layout and Art Work				
Retyping				
Photographing				
Typesetting				
Halftones				
Stripping				
Opaquing				
Plate Making				
Tusching - Benday				
Press Work				
Wash Up				
Paper				
Ink				
Cutting				
Paper Handling and Storage				
Bindery				
Outside Work				
Packing & Shipping				
Contingencies				
TOTAL FACTORY COST				
% DIST'N OF OVERHEAD				
TOTAL COST				
ADD PROFIT				
SELLING PRICE				

ORDER REALIZED _____

ORDER LOST _____

PRODUCTION . . .

. . . the way into advertising

by
Walter A. Lowen

SOME years ago I read a highly informative and intensely interesting book on the subject of advertising. It still occupies an honored place in my memory and during the course of the year I have many occasions to recommend it to the youngsters who knock at my door seeking the cryptic answer to that popular question: "HOW CAN I GET INTO ADVERTISING?"

I am especially reminded of the book now, because it points out that one of the best ways is through the door of the Typographic or Production Department. Behind every finished advertisement is a tremendous amount of detail work, work requiring patience, accuracy, knowledge and tact. And most of all are these qualities needed by the production man. They far transcend the value of a college education as equipment for success in advertising. Indeed, many of the most successful production men have only grammar school or high high school training.

In going through my files the other day I came across a letter attached to an application . . . a letter written by a production and traffic manager of a medium sized 4-A agency, written in answer to my request for a clear picture of his various daily activities. Because it is such a perfect thing of its kind, I'm going to succumb to temptation and give it to you verbatim. My correspondent writes:

"First let me say that on me rests the entire responsibility for the physical and aesthetic appearance of every advertisement we produce. If the completed job is good, I expect no credit; if it is not up to the usual standard, I can expect plenty of hell.

"When the contact man returns from the client's office with an order or request for layouts for a magazine or newspaper campaign, or instructions to have one of their packages re-designed or a window display created—he runs into my office to tell me what the client expects, what both the client and the contact man think should go into the job—and my work has begun.

"It is my job to schedule this program so that it fits into the plan for the week and at the same time to have it completed before the client starts hollering. I assemble all the relevant material at hand and take the job into the art director, give him an idea as to what it is all about—with a few helpful suggestions if I happen to have any, and give him a due date. I furnish sizes, closing dates, mechanical requirements or limitations and the job is off to a good start.

"Next I ask the copywriter to bat out some scintillating copy with a good catchy headline, which is turned over to the art department so the layout has something basic to start with. Next step is to follow up the art director and copy man to be sure they comply with the due date deadline.

"When the layout is handed over to me, I go over the entire thing to see that all elements have been included, also the copy to make certain all the client's 'musts' are included and that names are spelled properly, dates and addresses correct, etc. Then it is turned over to the contact man with instructions to have same approved by a certain date.

"When the layout and copy are okayed, and it is returned to my desk, my work has really begun. I must order finished art work, photographs, retouching, lettering. I must see that the lucies (tissue adaptations of orig-

inal layouts—scaled to various sizes) are made and work out well. I must select type faces to harmonize with the rest of the advertisement, cast up and specify same for the typographer (suggest the addition or cutting of copy when necessary) order the composition, proofread it, strive to improve the appearance of the type if possible. I must order engravings and to do this, I must know exactly how a photograph must be retouched to look exactly right when reproduced in either fine or coarse screen, I must be able to recognize values for good color reproduction. I must figure out ways of making art to save engraving costs. I must practice all kinds of economies and short cuts . . . pasteup proofs, occasionally contact clients, order electrotypes, proofs.

"I must know how to purchase good printing, what processes to use, what papers to select, must have an eye for good colors. Every step of the way my good judgment is tested and relied upon and in the end I must turn out a job that the art director, client and contact man like. I must see that everyone gets what he wants . . . and this is always a bigger task than it looks to be when spread out by a typewriter on a piece of paper."

Certain it is that a man should start mastering production details at an early age if he wishes to become thoroughly proficient. The knowledge he requires to do his work well can only be obtained through vast experience and by long association with the manifold problems that confront the production man every day. In the final analysis advertising production men are really "trouble shooters." To be successful they must love their work and really enjoy digging into and untangling knotty problems pertaining to mechanical production and the graphic arts.

If a man is not fortunate enough to start in this field soon after leaving school, there is another "in" that will help him. He may work awhile with a printer, engraver, lithographer or in other trades that tie up with advertising. In this way he will obtain some knowledge of how ads are produced.

On the other hand, if a young man starts as a beginner in an advertising agency he will soon realize that whatever he may be given to do, in some way practically every position ties up with production. For example, he may start as a checker. If so, he will be instructed to watch for the physical appearance of the ordered insertion, as well as its space and position. If he starts as a production biller, he will get a good knowledge of production and what is most important—costs.

I find that most agency heads insist on certain qualifications in a production man. First he must work well with people. He must be alert but patient. He must be diplomatic but insistent. He must not only please his immediate associates, but must keep the tradesmen in a frame of mind so that he can get the best possible service from them.

Second, he must keep production costs down. He passes on all bills from tradesmen and must know when a bill is high.

Third, his character must be unimpeachable. Temptations will (unfortunately) assail him. His patronage will be courted—but he must be strong enough to keep himself above temptation—"unspotted from the world."

If a man is employed by an agency to take charge of the buying of art for the art director, there are three requirements always emphasized. He must be able to tell whether the art will reproduce well in a given medium. He must be able to purchase art economically. He must be acquainted with artists and art services and be able to tell what artist will do a certain type of work the best and speediest.

It might be interesting to note that a good many agencies expect a production man to "pinch hit" in an emergency for the space buyer, assistant representative to the client, assistant art director, etc. In some of the smaller agencies the production manager also purchases all the office supplies, which makes him in fact a purchasing agent.

"What are the financial rewards for this work?" I hear you ask. To which I naturally reply, "Well, it all depends on the man." Some production men draw a hundred or two hundred a week—but not many. The vast majority are paid at present fifty to seventy-five, but actually *earn*, and are worth a great deal more.

However, with the advertising world so optimistic about 1937 earnings, salaries are bound to be soon adjusted upward.

A NEW METHOD OF HIGHLIGHTING NEGATIVES

By K. W. MARTIN

THE Sterling-Groesbeck Diaphragm is a compact little instrument which, under the proper conditions, will produce perfect drop-out or highlight negatives. An unassuming bit of machinery, its possibilities have not yet been fully realized. This brief description has been prepared in the hope that it will stimulate interest in the results which may be obtained when a *certain range of tone values can be eliminated at will from the copy.*

The most obvious use for this instrument is the production of highlight halftones. It is not always easy to eliminate the pure whites in a piece of copy without injuring the values of other tones. True, a highlight effect may be obtained by the manipulation of screen or stop or both during exposure. However, there must also be some loss of detail in the lighter tones and this detracts considerably from the success of the reproduction. The Sterling-Groesbeck Diaphragm helps greatly in removing this objection to the highlighting procedure. It has the advantage of economy when compared to hand retouching as not more than a minute is required to effectively highlight the most difficult subject.

The diaphragm can be employed to highlight wash drawings, vignette machinery or furniture and to reproduce pencil drawings with extreme fidelity. Some very interesting results have been secured in a preliminary way with color reproduction and it is probable that it will become increasingly useful in this field.

The instrument itself is simply but accurately constructed. It consists of a blade or tongue of stainless steel which fits snugly into the slot always present in a process lens. This stainless steel blade is thin enough so that an ordinary removable stop may be inserted in the lens with the blade. The remainder of the instrument consists of a micrometer screw mounted in brass upon the steel blade. In use, the blade and stop are placed in the lens and the stop is lined up with the iris diaphragm opening in the lens. The stop is then clamped firmly to the micrometer screw which has previously been set to zero. This arrangement makes it possible to move the stop in the lens with great accuracy by means of the micrometer screw. The reason why this is desirable will appear later in the article. The Sterling-Groesbeck Diaphragm with the stop in the proper position for zero setting is illustrated in Figure 1.

In order to explain how highlighting effects can be obtained so simply it will be necessary to consider the method by which a halftone image is formed. Actually, the formation of a halftone dot is complicated by light effects which are not yet thoroughly understood. For our purposes, however, the following outline should serve and no pretense of presenting a theory of halftone dot formation is intended.

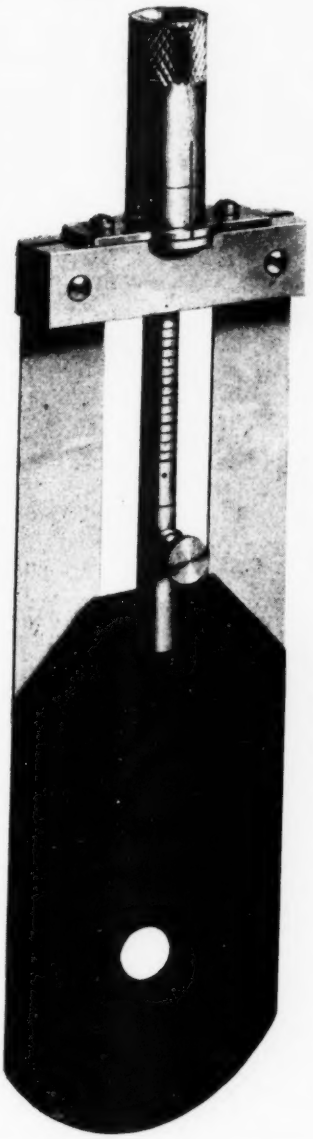

Fig. 1. Left. *Sterling-Groesbeck Diaphragm.*

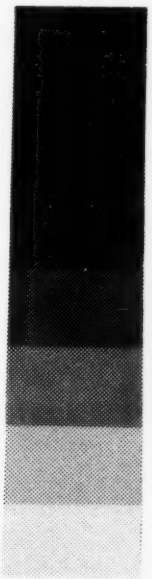

Fig. 2. Upper right. *The dots at the top are the highlight dots which must be eliminated before clear whites are obtained in the reproduction. This is a representation of a negative.*

A halftone negative is prepared from copy by photographing the copy through an accurately ruled screen or grating. This grating is located a small distance in front of the sensitive material. It is a grating in an optical sense, that is, it is made of parts which allow light to pass and parts which refuse the passage of light. In practice, the grating is formed of opaque lines ruled on two pieces of glass which are cemented in position so that the ruled lines are at right angles to each other. The light from the copy is caught by the lens and directed on the sensitive material. The screen presents a series of little windows through which the light from the copy must pass before it can reach the sensitive surface of the negative. Each tiny window passes a cone of light which is brightest at

the center and gets dimmer in the shadow cast by the opaque lines. The brightest light comes from the white parts of the copy while the blacks in the copy reflect so little light that they scarcely register even in the center of the windows. Figure 2 represents about the tonal range of the usual halftone negative. The left hand side is the result obtained by the light reflected by the blacks aided by a short "flash." The right hand side shows the part of the negative obtained from the whites. The light from the whites is so strong that only the parts directly behind the lines has remained unaffected. These are the highlight dots of the negative. Intermediate tones register as shown. Notice that the lines of the halftone screen run at an angle of 45 degrees as is usual for halftone work.

The problem is to eliminate the tiny open dots in the portions of the negative which have registered the whites. Any additional exposure will interfere with the proper values in the middle tones which are now correctly registered on the negative.

If it were possible to move the screen just one line, then these tiny open dots would come opposite windows in the screen instead of lying behind the bars and a very slight additional exposure of the copy would suffice to fog them over. It would be necessary to have a very complicated mechanism to move the screen accurately such a short

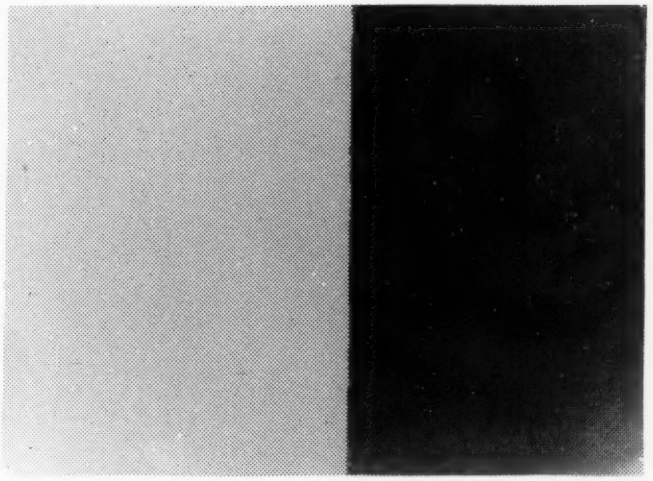

Fig. 3. *Right hand part has twice as many dots as has the left. See text for explanation.*

distance, but the same result may be accomplished by shifting the lens opening a comparatively large distance. The amount that the lens opening must be moved to accomplish this result depends upon the distance of the screen from the negative and the distance of the lens from the negative. By measuring these distances and consult-

(*Continued on page 61*)

Fig. 4. *This is a reproduction of a wash drawing on rough board. Exposures in negative making are identical except that the negative on the left received a 15 second exposure through the Diaphragm between the main exposure and the flash.*

Pictorial Interest

Get the most out of your pictorial reproduction by using LEXINGTON OFFSET. This surface-sized offset paper takes and holds detail, gives striking contrast in black and white and assures faithful reproduction, LEXINGTON OFFSET takes ink evenly, is cut square and is free from blemishes. Available in standard and four fancy finishes. Ask your paper distributor for test sheets.

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220 East 42nd Street, New York, N. Y.
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For FAITHFUL REPRODUCTION

LEXINGTON OFFSET

"An INTERNATIONAL Value"

MAINTAINING PROFITS THROUGH BETTER MANAGEMENT*

By HARRY ARTHUR HOPF, M.C.S., M.B.A., M.S.†

Introductory

FOR every activity, there is a popularly recognized criterion of success. In education, shall we say it is the attainment of an academic degree? in art, the gaining of a coveted prize? in sports, the winning of a contest? in politics, election to office? Surely we can agree that with respect to business, the ultimate criterion of success, as generally understood, is profit.

And yet, it is no secret that not every graduate of a college or holder of a university degree can be deemed well educated; the prize-winning artist does not necessarily possess the attributes of greatness; the athlete who has defeated his rivals may also have shot his shaft; the successful politician may never emerge as a statesman. So, too, it should not be taken for granted that because a business has measured up to the popular criterion of success by earning a profit, it is necessarily in good condition.

In judging the position of a business, it is essential to study the profit record over a period of time rather than for a single year or a brief span of years. Some businesses have earned profits by purely fortuitous circumstances outside their own control. So it was in the golden era before 1929, when the upward surge of business activity carried along even the most lumbering enterprises to profitable accomplishment. But, as need scarcely be noted, many of these were unable to survive the depression.

It should be added that even a sustained profit showing over a series of years is no guarantor of a healthy business condition, particularly if the profit trend has been irregular or diminishing. A question may then well be raised as to the source of the profits. Did they come as a result of the operations of the business or, possibly, from speculation in raw materials? Were they due to patents or other advantages which are beginning to lose their value? Did they derive from a market which is disappearing or being otherwise supplied?

Pertinent, too, is the question whether the percentages of profit earned compared favorably with the results of other units of the same industry for the same periods. And, finally, the more searching query: were the profits as great as could have been earned under other management?

It will be seen that when all of these questions have been answered, we shall have moved a long way beyond the simple, rule-of-thumb criterion, "Is the business earning a profit?" Even so, we shall not have penetrated to the vital region of inquiry, for our information will be purely historical. The great fallacy in attempting to judge of the condition of a business on the basis of the balance-sheet alone is that we are looking backward, not forward. We are considering past achievement, not future potentiality. To gain a true picture of the condition of any business, we must examine not only the accounting figures, but the management tendencies; not only its past performance, but its outlook for the future. We must look beyond mathematics and finance, to market, product, personnel, organization—in short, to management.

There can be no business man in this audience who does not realize that the important thing for him today is not whether he earned a profit last year or for the past five or ten years, but whether he has so built up his business that he is likely to earn a profit next year and in the years to come. Whether, in other words, he has supplied to his business the kind of management that gives him reasonable assurance that its profits will be maintained, and possibly increased, as time goes on.

Management—What Is It?

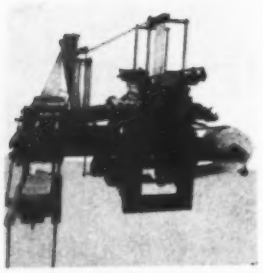
When the word *management* is used, it is well to establish just what is meant. It happens to be one of those useful words which has a sort of blanket applicability to any activity, whether it be business or some other pursuit. It is therefore often loosely used. Even when correctly applied, it has various well defined meanings.

The most obvious connotation is that which designates, collectively, those who manage an enterprise. In this sense we talk about *the management*, meaning, in the case of a business, the group of executives at its head. These may or may not be the owners; in large corporations, of course, they constitute a group quite distinct from ownership. Our first definition of management, then, refers to the persons who, speaking colloquially, *run* the business; that is, the managers.

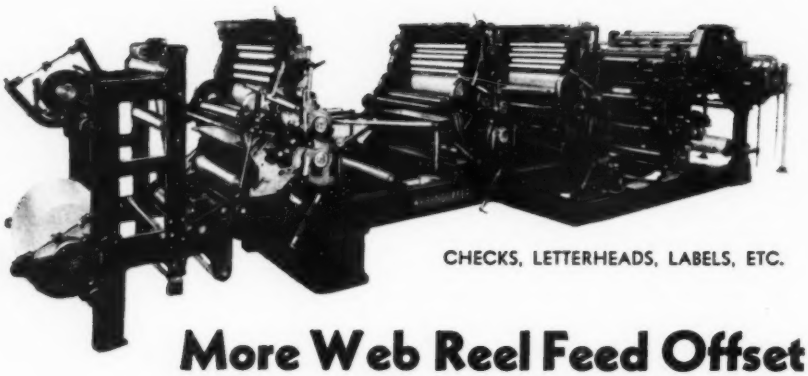
But management has another and, for our purposes, a more important meaning. I refer to the use of the word to signify what is done by those who manage. Just what is it that all managers do—or, rather, are presumed to do? What is there about their work that is common to them

* An address delivered at the Fifth Annual Convention of the National Association of Photo-Lithographers, Cleveland, Ohio, October 16, 1937.

† Managing Partner, Hopf, Kent, Willard and Company, Management Engineers and Accountants, New York and Boston.



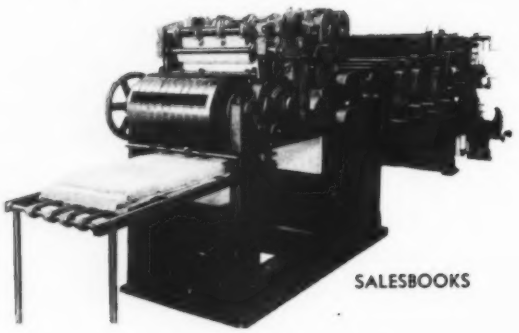
PATTERN CHARTS



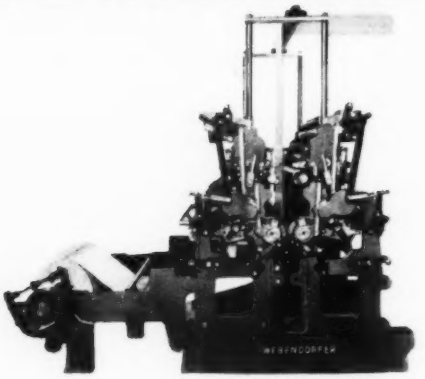
CHECKS, LETTERHEADS, LABELS, ETC.

BOOKLETS, PROGRAMS

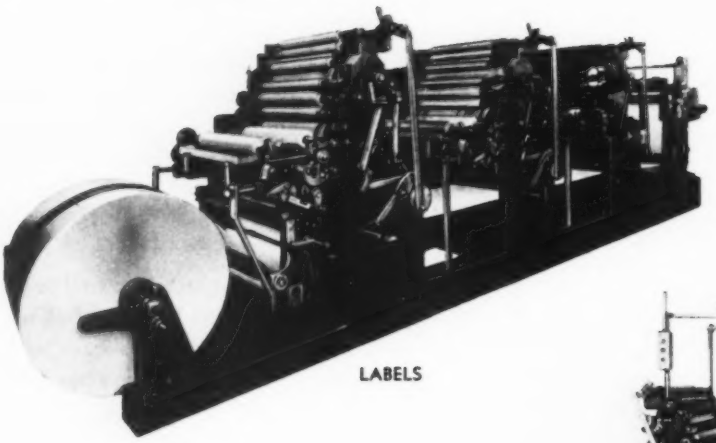
More Web Reel Feed Offset Presses in the U. S. A. today carry the Webendorfer name than all other makes . . . COMBINED



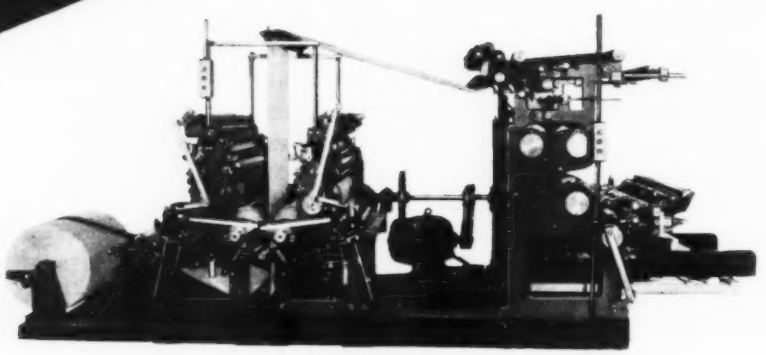
SALESBOOKS



NEWSPAPERS



LABELS



MAGAZINES

Exhibitor National Printing & Allied Industries Exposition, Coliseum, Chicago, June 12th to 20th inclusive

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American Made by

WEBENDORFER-WILLS CO., INC.

Builders of Printing Machinery for Over Thirty Years

MOUNT VERNON, NEW YORK, U. S. A.

all, whether it be a photo-lithographic business, or a department store, or a railroad that they manage?

Many definitions have been propounded by those who have given thought to this subject, to explain the meaning of the word management in the sense of the activities of those who manage. For my part, I confess a slight preference for one I have myself formulated as a simple and complete expression of the elements that comprise the concept of management: *management is the direction of a business enterprise through the planning, organizing, coordinating and controlling of its human and material resources toward the achievement of a predetermined objective.*

There is a whole philosophy behind that definition. I commend it to you as a touchstone for your own activities in managing the companies in which you are severally interested. If you, as managers, are doing all of the things that are enumerated in that definition and are doing them well, then I am bringing coals to Newcastle. But I suspect that there are at least a few of you who are trying to manage by short-cutting some of those elements, or who are finding difficulty in bringing them to expression in your companies. However, successful management involves nothing less than is stated in that definition. I ask you to bear it in mind as I use the word *management* in the course of this address.

There is one more meaning, a somewhat more abstract one, which should be clarified before we proceed to the more practical aspects of the subject under discussion. If it be granted that management is common to all business enterprise, then it should be possible to distill from the application of management to individual situations, certain universal characteristics. In effect, that is the case. As a result of years of experience and research on the part of engineers and other students of the phenomena of business, there has been accumulated a body of laws, principles and techniques which we know as the art and science of management. This, then, is the third meaning of the word management which I should like you to recognize: the reservoir of established and accepted theory and practice in management which is available to all who manage to draw upon.

While research in management is comparatively young, dating only from the very end of the last century, much of its accomplishment has already been absorbed into common practice in business. A vast area still remains for exploration and organization, but enough has been accomplished to justify the statement that the business man who ignores the fund of organized knowledge in management which is at his disposal through reading and study, is handicapping himself severely in the struggle for competitive advantage.

To be sure, examples can be cited of men who have built up great and successful corporations, as well as of many who have achieved profitable results in small businesses, without conscious adherence to any laws or principles of management and without special knowledge of its established techniques and processes. In many of these cases the forces of personality and leadership have compensated for lack of training and scientific knowledge; in others, unremitting industry and driving power may be credited with the superior results attained. Some businesses have prospered because of special advantages of product or market, and others have successfully lived on reputation long after the merits upon which it was founded had disappeared. Then, too, we must recognize that occasionally there arises a real business genius, a man of such acumen that he seems always to make the right moves, as though by instinct, and infallibly leads his organization to outstanding success.

But these are the exceptions. For one of them there are hundreds, possibly thousands, of businesses which struggle along and eventually founder, not because there is no genius at their head, nor because the product lacks merit or the conditions are unfavorable, but purely because those at the head know nothing of the art and science of management. Their mistakes are mistakes which could have been avoided; their failures are failures which could have been foreseen.

It is important, too, to recognize that the natural advantages which certain industries or individual companies were wont to enjoy in the past have to-day, for the most part, disappeared. Competition is stronger than ever before, if not within industries, at least among them. To-day the fiercest competition is the rivalry for the consumer's dollar. To-day the increased pace of living brings increased complexity and hazard to business in a multitude of ways. But paralleling these changes, perhaps even as a result of them, the art and science of management have been developed, providing business with a knowledge of cause and effect, with sign-posts and road guides by which to steer its course to a successful goal. Facts are at hand to take the place of opinion, principles to supplant trial and error, tested methods to supersede hunches.

Whether a business be large or small, whether it be of the corporate type or privately owned, whether its major activity be production, distribution or finance, its problems are amenable to the fundamentals of management. For the scope of management embraces men, money, methods, machinery and materials. It includes the study of all these, and the formulation of laws governing their action, reaction and interaction. It is the distillation of observation and experience concerning every function and activity of business. Through management, alone, can they all be brought under control and directed into channels of profitable endeavor.

Better Management for the Individual Business

Now what does all this mean to the photo-lithographic industry? What, particularly, does it mean to the individual companies which compose the industry? Does it not

(*Continued on page 67*)

COUNTER-ETCHING AND ETCHING

A discussion of some of the principles involved

DR. L. R. MELOY, Lithographic Consultant

THE object of this article is to bring out the fundamental reasons for counter-etching and etching, two of the most important operations in lithography. I have been asked many times by lithographers why a plate must be etched and counter-etched, and what the results of these two operations are. In this article, I will try to bring out the essential facts regarding the action of these operations on zinc plates. At some future time the same operations on aluminum plates will be discussed if enough interest be shown in the subject.

Counter-etching

A lithographer recently sent me five formulae for counter-etching as listed below. These are all used in various plants with varying degrees of success.

1.	Hydrochloric acid	1 oz.
	Ammonia alum	4 oz.
	Ammonium Bisulfate	1 oz.
	Water	1 gal.
2.	Acetic Acid 28%	24 drops
	Water	½ gal.
3.	Potassium Alum	4 oz.
	Nitric Acid	½ oz.
	Water	1 gal.
4.	Glacial Acetic Acid	24 drops
	Potassium Alum	2 oz.
	Ammonium Chloride	1/8 oz.
	Water	1 gal.

Having listed these formulae, he asks "Why counter-etch? What action has the counter-etch in sensitizing the plate and what function does the combination of ingredients perform in the counter-etch?"

We counter-etch a plate to accomplish two important things: to clean the plate thoroughly of all the dirt and residue left from the graining operation, and to remove oxidation and expose the raw metal. The term oxidation is used to describe the chemical salt formed on the plate when it has been exposed to air. The substance formed may not be truly an oxide, but the term provides a good explanation. When we clean the plate by counter-etching, we remove all of these foreign materials. The components of the counter-etch, therefore, must be such as to form a water soluble salt of the oxides which can then be easily removed by flushing the plate with water. Care must be taken in the choice of a counter-etch because it must perform this operation thoroughly, and yet not eat away any of the metal grain.

The oxide which is formed on the plate when exposed to air attracts and holds grease and ink just as well as does the sensitized or counter-etched raw metal. But the oxide does not adhere well to the metal itself. Therefore, if the image is printed or run down on this oxide coating, the chances of the work walking off the plate are much greater than if the image is put on a clean counter-etched plate which has the raw metal to hold the image. In other words, counter-etching is nothing more than a very thorough cleansing of the plate.

In answer to the question as to the function of the combination of ingredients used in the five formulae, there is still some doubt in the minds of chemists as to the exact

chemical action which takes place when a counter-etch is applied to a zinc plate. As mentioned before, there are certain acids which react with the oxide to produce a water soluble metal salt which is readily carried off when the plate is flushed with water. In most formulae suggested to me, a few of which are given above, there are, however, several acids and salts included which react with the metal to produce an insoluble metallic salt which cannot be removed from the plate. These acids and salts should never be used in making a counter-etch.

My correspondent asked me if I could suggest a better counter-etch than the ones he submitted to me. To suggest a better counter-etch is a matter of personal choice, and in this case, my suggestion must be based upon results obtained in the field which have proven most satisfactory in the majority of plants. I recommend the hydrochloric acid counter-etch given below because it consists of only one ingredient in water. It is easily controlled and will do

(*Continued on page 64*)

INSURANCE—PROTECTION FOR YOUR INVESTMENT

By HERBERT H. LEVESS

Certified Public Accountant

New York

IT is only natural, when a person has made an investment, that he should seek to protect it against the many hazards which may possibly threaten its safety. To the business man, this principle is all-important. Every business is subject to influences, often unknown and unforeseen, which may cause serious threats to the normal functioning of its affairs, to its capital investment, and sometimes to its very existence.

No amount of precaution can guarantee absolute safety from fire, explosion, theft and the many other hazards encountered in the conduct of a business. It has therefore become customary for the average establishment to take out insurance against loss which may be occasioned by these dangers; to pay a fixed annual charge as a safeguard against an irreparable impairment of capital.

The wisdom of a carefully planned insurance program cannot be overemphasized. Too many organizations are apt to give only scant attention to the subject. Generally, insurance will be taken out against fire on plant and stock, sprinkler leakage, workmen's compensation (which is practically compulsory) and possibly payroll robbery. With these policies in one's possession, it is often felt that adequate insurance is being carried despite the fact that some other kind of coverage may be essential.

There are many important types of insurance with which the business executive should become familiar. A working knowledge of the following would enable him intelligently to work out an insurance program suitable for his plant:

- Fire—Plant and Contents
- Fire—Customers' Copy and Materials
- Sprinkler Leakage
- Explosion
- Riot, Civil Commotion and Vandalism
- Use and Occupancy
- Public Liability
- Burglary and Theft
- Payroll and Messenger Robbery
- Forgery Bonds
- Fraud Bonds
- Fidelity Bonds
- Workmen's Compensation
- Automobiles:
  - Public Liability
  - Fire, Theft and Property Damage
- Credit Insurance
- Life Insurance—Officers and Valuable Employees

The list is rather imposing but it is not necessary nor even advisable in most cases that the insurance program include each of the policies mentioned. The executive should at least know what the coverage is and be able to determine in his own mind what insurance he should or should not carry. The following comments upon some of the policies listed may be helpful.

Fire

Most policies covering fire losses contain a co-insurance clause, by which the insurance company is not liable for a greater proportion of any loss or damage than the amount of the policy bears to —% (80% under the New York standard clause) of the actual cash value of the insured property at the time the loss occurs. Assuming that there are one or more policies, each containing the 80% co-insurance clause, and there is a loss, the assured will collect the amount of his loss, up to the face value of his policies, provided that his total insurance equals at least 80% of the value of his property. To illustrate: If the value of all the property covered amounted to $10,000 at the time of loss, the insurance carried must equal in total at least $8,000.

However, if the policies amount to less than the sum required, then the assured will recover only such proportion of his loss as the insurance carried bears to the amount required. Using the above illustration, let us assume further that the assured carried only $6,000 of coverage, or ¾ of what was required. Now further assume a $2,000 loss. The recovery will be only ¾ of $2,000 or $1,500.

It frequently happens that application of the co-insurance formula would result in a recovery in excess of the coverage. In our illustration, if there were a total loss, the formula would give a result of $7,500 (¾ of $10,000). But the assured is still limited by the face amount of his policies and therefore the limit here is $6,000.

Which ever way one looks at the problem, if the assured takes out coverage less than that required under the co-insurance clause, he is bound to be a loser in the event of a loss.

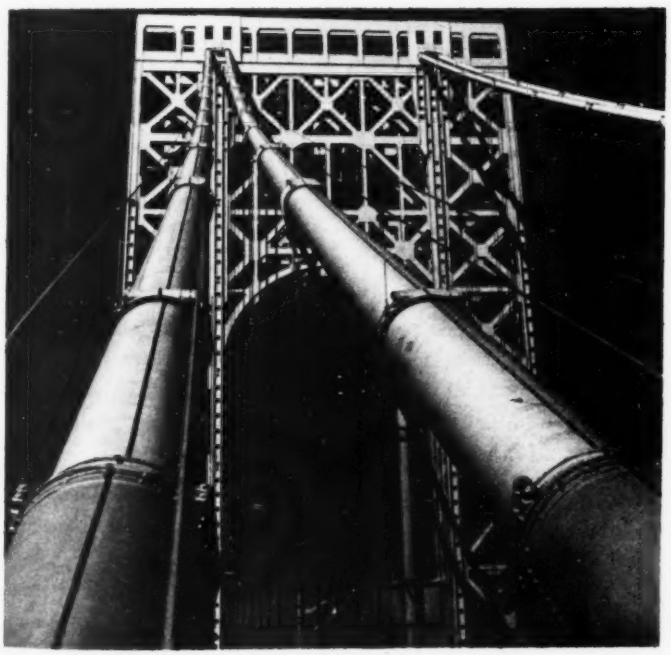
The assured, however, should be careful not to go to the opposite extreme and carry insurance in excess of the value of his property. Most policies contain a contribution clause which has the effect of adjusting the liability of each insurance company involved so that the assured will recover as a maximum the actual amount of his loss.

In connection with fire insurance, the lithographer may well keep in mind the advisability of carrying such a policy to cover loss of customers' copy, cuts, layouts and art work. The ordinary policy will not answer the purpose, for it only covers property belonging to the assured himself.

Explosion

The explosive solvents which are constantly in use in lithographic plants are a source of danger in that a spark or an unexpected flame may set off the fumes. An explosion thus occurring, in the absence of fire, will not be compensable under a fire policy. Even if fire follows, the assured can recover only the loss proximately caused by the fire.

The average lithographic plant should therefore carry explosion insurance, which would cover any loss resulting from explosions on the premises of other plants as well.



Insurance bridges the gap between loss and resumption of profit

Riot, Civil Commotion and Vandalism

A policy of this kind would protect the assured against acts of malicious mischief. It is worth the consideration of every executive in view of the numerous strikes and the general labor unrest that have lately been seen.

Use and Occupancy

Here is an insurance subject which is unknown to many people, and is inexplicable to others who have heard of it. Yet it is a form of insurance that may be strongly recommended to many firms.

Let us visualize a plant being forced to suspend operations by reason of fire damage. The damage caused by the fire may be recovered but consider the loss occasioned by the continuation of fixed expenses without compensating income.

The company must ordinarily continue to pay rent, telephone charges, interest on borrowings, salaries of corporate officers and other regular charges. It might be necessary, in order to keep the organization together, to retain on the payroll managers, foremen and some exceptionally skilled workmen. In the case of a partial suspension of operations for a limited time, it might be best to retain all employees. Furthermore, there is a profit which would have been earned during the period of suspension.

Use and Occupancy insurance places the company financially in the position in which it would have been had there been no interruption and enables it to receive the income it would ordinarily need to cover fixed charges and its customary net profit.

Fidelity Bonds

Every company has in its employ persons who, if they were so minded, are in a position to divert company funds or company property to their personal use. We frequently hear of defalcations of petty cash clerks, payroll clerks and bookkeepers, of collusion between employees and outsiders. The fidelity bond is intended to protect the employer from losses occasioned by dishonest employees.

Workmen's Compensation

Workmen's compensation in most states, is mandatory. If the employer fails to secure compensation insurance, the injured employee may nevertheless collect from him whatever would be paid under the compensation law. The employee has the option also of bringing an action against his employer on account of injuries sustained, in which case the employer is deprived of certain defenses to which he would otherwise be entitled.

No employer should trifle with the law in this regard. His safest course is to secure proper insurance either with the State Fund or with an independent company.

(Continued on page 57)

Developments in Offset Inks

(*Continued from page 28*)

Vehicle research has produced a satisfactory lithographic synthetic varnish, and offset inks have been made from this new material. These new synthetic vehicle inks, while comparatively new, have proven themselves in many instances to be superior to the old type linseed inks. Some of the advantages claimed for these new inks are:

1. It is possible to run these inks with a minimum amount of acid in the water fountain.
2. The ink lifts off the blanket unusually clean, giving a stronger impression with the same film thickness.
3. Dusting Bronzes adhere less readily to synthetic ink films.
4. These inks dry faster than linseed inks.
5. These inks are considerably more rub and scratch proof than linseed inks.
6. Tin printing inks made from synthetic vehicles dry in 6 minutes instead of 20 minutes for linseed inks at 250° F.

I believe our research chemists have only scratched the surface of the possibilities of the synthetic vehicle field and that greater strides in this work will be made in the next few years.

Naturally there are many problems and projects in the ink research laboratory and until they are released, you can readily understand they cannot be discussed. However, there are some unsolved problems we can discuss and for which the research chemist wants to know the answer. For instance:

1. What determines the printability of an ink and how can it be measured?
2. What is the correct film thickness: What factors govern the lifting of an ink, and how do these affect the quality of the finished print?
3. Can we measure the tack of an offset ink scientifically or mechanically and not depend on the skilled ink maker's sensitive finger?

It is a mistake to regard the printing art as a purely mechanical operation looking for development only from improved machinery. The skill of the operator and improved machinery are, of course, important but paper and ink must advance if the industry is to progress.

It is, therefore, gratifying for me to acknowledge the splendid help and cooperation we have received from all the paper research laboratories. There has been a great deal of work done by paper and ink laboratories for the improvement of the printing art and with the same spirit prevailing, you can look to the future, knowing that the ink industry will do its part.

Insurance—Protection for your Investment

(*Continued from page 55*)

The subject is especially pertinent in lithographic plants because of the constant use of chemicals and the accompanying fire, explosion and poison hazards.

Life Insurance

Every going concern has in its employ officers and other executives whose services are extremely valuable to it and whose loss would cause serious impairment to the proper functioning of its business. Many companies have recognized the fact that such services, although they cannot be valued for purposes of a financial statement, are nevertheless a valuable asset and have taken out insurance on the lives of such employees payable to the company. This form of insurance, where the company is financially able to carry the expense, is highly desirable.

There are many forms of coverage which may be taken out on a three- or five-year basis at reduced premiums—the three-year policies at a two and one-half year rate and five-year policies at a four-year rate. Some companies fail to recognize this advantage and renew their policies yearly. A sensible plan, where such reduced rates are obtainable, would be to divide the total coverage, on a three-year plan, into three equal policies each to expire so that only one will be renewable each consecutive year. The result would be to impose upon each year's operations a proportionate share of the expenditure burden and yet obtain the benefit of the reduced rate.

This article has made no attempt to embrace every type of insurance that the business man may carry. The coverages listed are merely those which are most common, and in the great majority of instances will provide adequately for individual needs. Occasions often arise where special forms of insurance are advisable. Today, almost any form of risk is insurable.

The problem of a sound insurance policy should be considered not only from the coverage angle but also from the point of view of cost. The writer knows of a commercial house whose insurance expense for the year 1934 was $9,000. In the early part of 1935 they called in an insurance broker together with their accountants. As a result, they cancelled some policies, changed the form of coverage on others, and revised the entire insurance set-up. All insurance matters were placed under the supervision of one executive. For the year 1936, the insurance cost was $6,700, a reduction of $2,300, with equal if not better coverage.

If you have not already done so, call your accountant and your insurance broker into conference and be sure that you are adequately protected in accordance with the needs of your business. Likewise, it would not be amiss to give your insurance set-up a periodic overhauling.

Photo-Offset Camera Operations

(*Continued from page 22*)

erly formed opaque dots. Since the transparent dots are the printing dots on the press plate, they must be clear and sharp and of a size which will allow for a faithful reproduction of the tones of the copy.

A negative of a contrast copy must possess small pin point transparent dots in the highlight (darkest) region of the negative and opaque round dots in the shadows (more transparent regions). The size of the opaque dots is influenced by the amount of detail in the shadows of the original, by the screen distance, the stop size and the exposure.

Copies possessing a great black area, and small patches of white which are accentuated by the black, are known as contrast copies. These, as a rule, require shorter exposures with the highlight stop, but a longer exposure to reproduce the detail in the darker areas (shadows). Detail exposures are made with the smaller stops F/32 or F/45 and should be of sufficient duration to reproduce all the detail of the original. Without sufficient exposure much of the detail will be lost with no possibility of capturing it later. Without this detail a negative is known as "too contrasty" and a plate from such a negative will be very dark in the shadows and cause the entire picture to appear as a solid where the dots should show.

Flashing is an auxiliary exposure given to increase the opacity of the dots in the shadows, partially formed during the primary exposure. Flashing is accomplished by using a plain sheet of white paper, of good reflective power, over the entire original. The exposure is made with a small stop F/45 or F/64 or F/90 with the screen set at the same separation as for the primary exposure. The exposure duration must be sufficient to form a solid black dot but not to increase the size of the dots formed in the shadows during the regular exposure.

A flat copy is the exact opposite of a contrast copy, for there is little difference between the highlights and the shadows, which cause the entire picture to appear gray. The highlight exposure for a flat copy must be increased so as to form larger opaque dots, and consequently smaller transparent dots, in the darker regions of the negative. Detail again is very important and should not be lost through exposures which may be too short. Flashing a negative of a flat copy is dispensed with many times, because of the greater reflection of light during the regular exposure and the consequent stronger dot formation in the middletones and shadows.

Because adequate exposures are important to any negative medium if faithful reproductions of the original are to follow, the relation of exposures to halftones is brought up in this article. It must be realized, however, that this mention is by no means a complete treatise on the production of halftones. The methods in general use for producing halftones will be discussed in a later issue.

Original Copy Versus Quality Layout

(*Continued from page 33*)

After the preparation of copy, the necessary time should be taken to go over the entire copy. It should go into the shop perfectly clean so that no rubber endings are hanging on to cause open spots in the negative. The necessary instructions should be noted plainly on the copy as to width and depth to be reduced, and all copy for inserting properly keyed. This rule applies not only to copy prepared in the plant, but also to the material coming from the customer. Teaching the customer step by step as to the proper handling of his original copy cannot help but give him further ideas as to the use of photo-lithography, and also cement him to your house as a permanent customer.

Again, let emphasis be placed on the need of salesmen and representatives becoming better acquainted with the simple rules of copy preparing so that suggestions for the improvement of customer's copy are immediately forthcoming before the job gets under way.

These suggestions of copy preparing serve a double purpose for they not only benefit the customer but they cut down labor cost. The less time shopmen are compelled to spend on matters which rightly should be taken care of by the customer, or the preparatory department, the more can they concentrate on their duties, and the better the shop's schedule be adhered to.

The writer has served over seven years in two large lithograph houses and one of the outstanding complaints of the shopmen is the constant guessing as to how to execute the customer's copy. Some splendid articles on copy preparing have appeared in this magazine in the past and it behooves photo-lithographers to see that copies of such articles get into the hands of those who are contacting prospects and customers. Such material can well be reproduced and distributed among the interested employees.

Cutting Costs and Improving Quality

(*Continued from page 25*)

the piece itself is constructed on sound selling principles, and unless harmony, balance, proportion, etc. are strictly observed, the finest art technique in the world will not cause the reader to act and react in the manner desired by the advertiser.

If you have a young man in your organization who is inclined to art or layout, or a compositor who likes to rough out his composition on paper before actually setting it, for heaven's sake drag him out from behind the case or the stripping table and help him develop his talents. You'll find such a man will be a valuable adjunct to your business. He will eventually cut composition costs, build quality into both your letterpress and offset work and can be made of great help to your salesmen.

Next month we will discuss the presentation layout and how it helps to bring in the orders.

A New Method of Highlighting Negatives

(*Continued from page 47*)

ing a table the stop attached to the Sterling-Groesbeck Diaphragm may be raised the correct distance by means of the micrometer screw. The diaphragm and stop are then inserted in the lens and a short additional exposure of the copy made. The negative is then developed and finished the usual way.

Figure 3 is included to show with what accuracy the new dot can be put into position between dots already in place. There are twice the number of dots in the right hand portion of the illustration than appears in the left. The negative was made by flashing a film long enough to register the value shown on the left all over the negative. Then the left half was masked and the Sterling-Groesbeck Diaphragm placed in the lens with the proper setting so that when again flashed a second set of dots was placed exactly in the center of the dot formation already there. The masked part was, of course, protected and did not not receive the second set of dots.

Figure 4 shows the effect of using the Sterling-Groesbeck Diaphragm on wash copy. No opaquing was done on either negative except for a few inevitable dirt spots in the background which had to be stopped out.

NOTE: For the reader's convenience in examining the illustration, a 65-line screen was used. The same effect can be obtained with the finer screens commonly used in photo-lithography. Figure 4 is two-thirds size.

LEWIS W. SPAULDING

The many friends of Lewis W. Spaulding are saddened by his sudden death on August 21st, following a surgical operation. He leaves a wife and three daughters, a father, two brothers and three sisters.

Born in Newton, Massachusetts, December, 1894, son of Charles and Susan Harris Spaulding, he was educated in the Newton and Hingham schools, entering Amherst Agricultural College. His progress toward becoming a scientific farmer was cut short summarily by the entry of the United States into the World War.

On his return home, he married Evelyn Richards of Hingham and settled in that town. Soon he entered the employ of the Spaulding-Moss Company, the outstanding blueprint concern of New England originally founded by his father, Charles Spaulding. Here his pleasing personality and invariable good humor endeared him both to employees and customers. He became superintendent of all manufacturing operations and was a substantial factor in helping pilot his company to its important position in the photo-lithographic industry.

Sulphite, Sulphate and Other Pulps*

THERE are probably no two terms more confusing to the average buyer, and user, of paper than these, "Sulphite" and "Sulphate." Even those long connected with the paper industry are often at a loss for a clear definition of these two terms.

To clear up any misunderstanding in this direction a brief description of the standard pulps used in the manufacture of paper are given below.

The strength of the chemicals used, steam pressure and duration of cooking, are the most important factors in the manufacture of chemical pulp. In general, slow cooking of pulp at low steam pressure gives the best results.

The primary processes in the making of the various chemical wood pulps are much the same. The difference lies in the various chemical treatments of the fibre, all of which, however, have as their object the isolation of the cellulose fibre, which is the base of all paper stocks, through the dissolution of non-cellulose compounds.

No. 1—*Ground Wood* is manufactured by forcing pieces of peeled or barked wood under hydraulic pressure against a grindstone which rotates across the grain and which grinds together the fibrous and non-fibrous material in the log. Water is admitted to the grinder, the "slush" of the ground wood is thrown off and screened. This product may then be used directly for conversion into paper, or held in storage. Newsprint is, of course, the most common of our ground wood papers. Some of the cheaper book papers contain a percentage of ground wood.

No. 2—*Sulphite Pulp* is manufactured by cooking uniform chips of spruce, hemlock, balsam and a few other woods, under pressure in a solution of Calcium and Magnesium bisulphite to dissolve the inter-fibre organic material, or binding material, from the cellulose fibres. Cellulose is the fundamental material of the structure of vegetation and is insoluble in all ordinary solvents. Several distinct types of sulphite pulp, each having a definite use for which the other cannot easily be substituted, are produced; the property of the pulp depending on the length of cooking, which varies from 6 to 20 hours. The pulp is then discharged from the digester, washed free from ligneous and resinous material held in the cooking acid, and in many instances further refined by bleaching. This pulp is used largely in making offset, bond and book papers.

No. 3—*Soda Pulp* is produced by cooking uniform chips from broad-leaf woods, under pressure, with a cooking solution of caustic soda, prepared by causticizing soda ash with lime. Poplar, birch, cottonwood and basswood are representative of the types of wood converted by this process. Practically the entire product of the soda process

** Edited by E. B. Wadsworth of the Milton Paper Company for the United States Printing and Lithograph Company.*

is bleached before marketing. This element is used to give bulk to the finished paper.

No. 4—*Sulphate Pulp* is produced by cooking uniform chips or various woods in a solution containing caustic soda, sodium carbonate, sodium sulphide and allied products. The sulphate process is an outgrowth of the soda process and differs from it in that the loss in raw material is replaced by sodium sulphate instead of soda ash. The sulphate, as such, does not function, but by means of chemical action it is converted into new products which are caustic in nature. The sulphate process produces strong unbleached pulp which is used in the manufacture of kraft. Mitscherlich pulp is a German variation of the sulphate process in which the pulp is cooked four times as long under low steam pressure. The resulting fibre is of greater strength.

Some Copyright Regulations to be Remembered

Reprinted from THE TYPOTHETAN

IT HAS LONG BEEN the custom, when printing copyrighted work to indicate copyright by the use of the letter C enclosed in a circle, thus: ©, followed by the name of the copyright proprietor.

Recently, however, several cases have been brought to our attention where matter thus designated has been returned by the Copyright Office of the Library of Congress and copyright refused on the ground that it does not comply with Article 1, Section 18, of the Copyright Laws.

On such items as maps, works of art, models or designs for works of art, reproductions of a work of art; drawings or plastic works of a scientific or technical nature, photographs, prints and pictorial illustrations, the symbol ©, accompanied by the name of the copyright owner is sufficient. However, the Copyright Laws require that in all other cases the word "copyright" or the abbreviation "copr." must be used, accompanied by the name of the copyright owner.

If the piece be a printed literary, musical or dramatic work, the notice must also include the year in which the copyright was secured by publication.

Attempt to take Patent Office Printing out of G. P. O.

It is reported that an attempt is being made to take the work of the Patent Office out of the Government Printing Office. The plan is to have this work, which requires the employment of more than 200 employees of the G. P. O., done by a multilith process, at a saving estimated at about $160,000 a year. The move is strongly opposed by the Public Printer and by labor officials.

Counter-Etching and Etching

(*Continued from page 53*)

its work without injuring the plate. It does actually produce a cleaner, more sensitized surface for the image than any of the other formulae. My suggested formula is:

Hydrochloric Acid . . . . . ¾ oz.
Water . . . . . 1 gal.

It should be noted here, that the counter-etch cannot remove the old work which sometimes shows up on the plate. The materials used in making a counter-etch cannot react with the greasy residue of which the old work consists and, therefore, the counter-etch is of little real value for the purpose. The best way to remove old work is to return the plate to the grainer and save time and worry.

The results of counter-etching and the length of time the solution should remain on the plate depend entirely on the strength of the solution and its ingredients. If the formula I have given is prepared accurately, thirty seconds should be the accurate time for counter-etching. If, however, the solution is not prepared accurately, the time will vary slightly. This is an excellent reason for using a simple formula, which reduces the possibility of an error in mixing the ingredients. If the solution is too strong, the plate must be flushed almost immediately to prevent the grain from being attacked. If the counter-etch is too weak, the plate will not be properly cleaned and sensitized. To prevent trouble, the formula should be exactly standardized so that the time needed for the counter-etch may also be standardized.

I have also been asked whether the counter-etch will affect albumin coating or any subsequent operation if it is not thoroughly flushed from the plate.

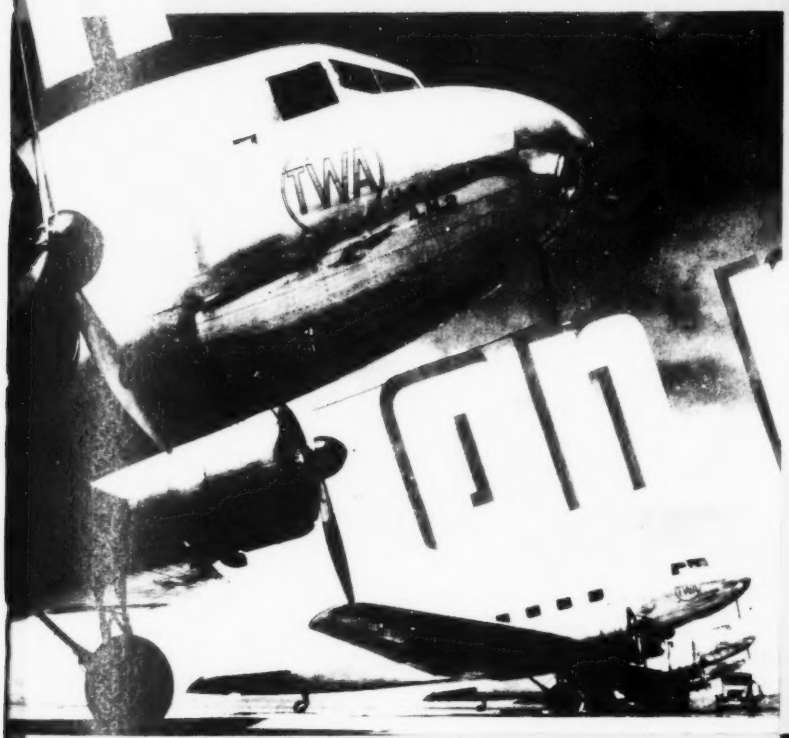
To answer this, let us discuss the procedure. The counter-etch solution should cover all parts of the plate at about the same time. This is accomplished by flowing it over the plate, rather than by spreading it over with a brush. After sufficient time has elapsed it should be thoroughly flushed from the plate. If any quantity of the counter-etch remains, it will continue to work on the plate until it is spent. This, naturally, would injure the grain of the plate, and explains why the flushing operation must be complete. I believe that this explanation will explain the necessity for thorough counter-etching. Improper counter-etching may produce scum, tint, grease, walking off, and blindness. These have all been covered in my articles in the July and August issues of the PHOTO-LITHOGRAPHER.

ETCHING

I have been sent a group of four formulae for plate etches as follows:

1. Ammonium Dichromate . . . . . 3 oz.
   Water . . . . . 8 oz.
   Med. Gum Water . . . . . 24 oz.
   Phosphoric Acid . . . . . 1 oz.

The Ready-to-run Offset



• In its first year of introduction into Metropolitan lithographic plants ADENA OFFSET chose no mediocre companions. ADENA went on parade with a score of advertising efforts that have since known great success and much discussion in advertising circles.

Not bad for so juvenile an offset paper as ADENA. Nor was it found wanting in any regard. We folks at J. E. Linde Paper Co. are proud of ADENA'S record to date. And right now we're foreseeing many more triumphs.

How can you use ADENA today?


MADE IN
SORRENTO
SAVONA
AND 12 OTHER
FINISHES
Photo—Courtesy Pan-American

● ADENA OFFSET won its spurs on its own. No great and grand claims, save for its ready-to-run feature, were made for it. ADENA proved its right to high ranking in this town's lithographic shops by its pressworthiness. Reason enough, then, for its acceptance there today.

The Chillicothe Paper Co. built into ADENA OFFSET every requisite of a fine offset printing paper. By their giant humidifying system they conditioned paper, on the machines and in storage, coming to Metropolitan plants ready-to-run.

That was their story. It remained only for press performances to test their claim.

As exclusive distributors of ADENA OFFSET we're proud to report, now, after a year of introducing this aristocrat of fine offset papers, that the ready-to-run assertion was no idle boast. Lithographers said so. And, they added too, they liked to run ADENA.

We couldn't ask more then.

We can't ask more today, because ADENA OFFSET is a favorite wherever offset papers are used.

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Weights are for 1000 Sheets.

WHITE WOVE	50	60	70	80	100	120	150
22½ x 35	83	99	116	133	166	199	249
25 x 38	100	120	140	160	200	240	300
28 x 42		148	174	198	248	298	
28 x 44		156	182	208	260	312	
32 x 44		178	208	238	296	356	
35 x 45	166	198	232	266	332	398	498
36 x 48	180	220	256	292			
38 x 50	200	240	280	320	400	480	600
41 x 54		280	326	372	466	560	
44 x 64		356	416	476	592	712	

INDIA WOVE					
25 x 38	120	140	160	200	
35 x 45	198	232	266	332	
38 x 50	240	280	320	400	

WHITE HANDMADE (SORRENTO) and BASKETWEAVE (SAVONA) FINISHES					
25 x 38	120	140	160	200	240
28 x 42	148	174	198	298	
28 x 44	156	182	208		
35 x 45	198	232	266	332	398
38 x 50	240	280	320	400	480

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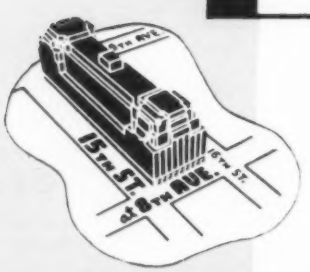

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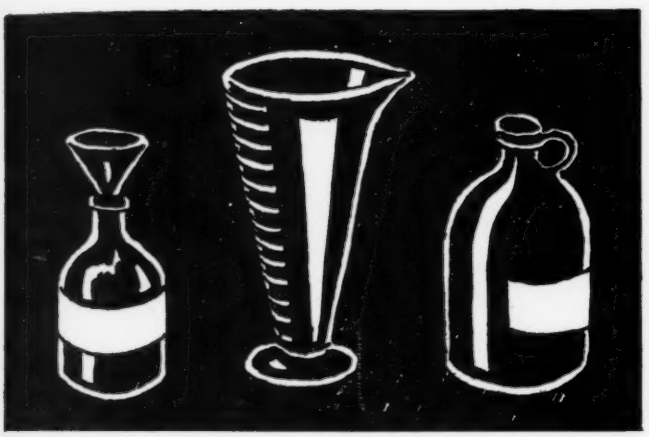
2. Ammonium Phosphate..... 3 oz.
Ammonium Nitrate..... 3 oz.
Ammonium Fluoride.....½ oz.
Water.....16 oz.

3. Tannic Acid..... 1 oz.
Phosphoric Acid..... 2 oz.
Chromic Acid..... 2 oz.
Med. Gum Water..... 8 oz.

4. Ammonia Alum..... 3 oz.
Tannic Acid.....1½ oz.
Water.....12 oz.
Gum water to 1 gal. volume
Phosphoric Acid..... 1 oz.

The question submitted to me is "How do these or other chemicals in the etch affect zinc so that the plate takes moisture and repels grease?"



The purpose of the etch is to produce a film on the non-image areas in order to protect the plate. Gum Arabic solution alone is an etch which, to a great extent, protects the plate from scum or tint. The other chemicals, which are usually acids, aid in strengthening the solution and making the gum more adherent to the plate. Due to the water-absorbent nature of this film, it will not take ink when dampened. Therefore, the non-image areas of the plate are protected. It should always be remembered that this is a soft film and when it is subjected to friction, abrasion, or exposed to acids of a counter-etching type it is broken or removed and the plate will subsequently tend to scum or tint.

The formula I would recommend for the best all around etch for zinc plates is as follows:

Phosphoric Acid..... 1 oz.
Ammonium Dichromate.....1/5 oz.
(1 oz. in 5 oz. water)
Gum Arabic 14° Be.....25 oz.

My correspondent asked me to explain the functions of the combinations or individual ingredients of the four formulae which he submitted to me. The acids and their salts in the etch which are listed as phosphoric, tannic, chromic and nitrate and dichromates, when applied alone to the zinc plate, do not produce appreciable desensitizing of the plate unless gum arabic is applied immediately following their application. Therefore, we prepare the etch with the acid and gum dissolved together. This enables the gum solution to take permanent hold on the plate and produces a more resistant film. There is a difference of opinion among chemists as to exactly what happens during this operation. But summing up their views, we find that the desensitized plate can be the result of the etching or burrowing action of the acid in the etch, which increases the extent of the plate's surface. It is probable that this action also forms a film of insoluble metallic salt.

Another frequent question which comes to me is, "How is the rate of action of the etch determined?"

The etch will react with the plate at a speed determined by the density or Baume of the gum solution. This can be demonstrated by using a small amount of nitric acid in a thin gum solution. The reaction will be so rapid that the plate will be injured. If, on the other hand, the same amount of acid is used in a heavy gum solution, there will be no effect on the plate, even after several minutes. From this, we can see that by using the same amount of acid and varying the density of the gum solution, a strong or weak etch may be obtained. This will explain the necessity of standardizing the gum solution, as well as all the other ingredients, in order to have an etch which will always act accurately on the plate. The use of an etch which is too strongly acid, often does considerable harm by destroying the gum film and leaving the raw plate exposed.

Tannic, chromic and gallic acids and dichromates in conjunction with phosphoric acid and gum solution, all react in the same way upon a plate. Therefore, there is no purpose is using more than one of these ingredients. The use of hydrofluoric, chromic and tannic acids is not recommended because they have no properties which are not possessed by other acids.

Finally, we will answer the question as to whether the etch or its ingredients affect the image on the plate in any way. If the image is not well protected by rolling up or rubbing up with ink and then powdered with rosin or asphaltum powder, the etch solution will often "bite" through and undermine portions of the image. This happens most often when the image carries highlights.

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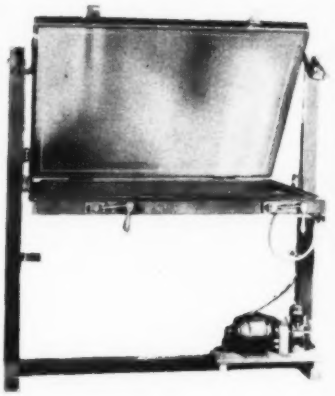

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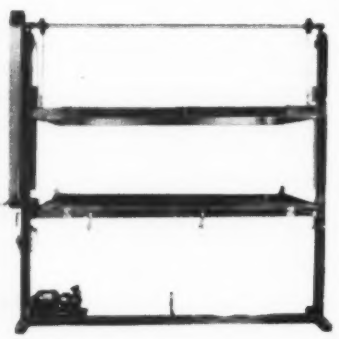

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Maintaining Profits Through Better Management

(*Continued from page 51*)

open up a vista of new fields to conquer? Does it not point the paths which must be travelled if the business is to be made increasingly profitable? Let us single out some of the sign-posts on these paths and discover what management has to contribute for the guidance of the companies here represented in their efforts to stabilize their operation on a profitable basis.

First, let me say that while many of the problems of the companies which form this association are undoubtedly common to all, they will be felt with varying degrees of acuteness according to the circumstances surrounding the operation of each company and the measures that have been taken to solve them. Each company has individual characteristics which distinguish it from the others. Age, size, form of organization, capital structure, objectives, traditions, policies and composition of the executive group are some of the factors which will tend to emphasize certain problems in one case and others in another. Consequently, what is said here cannot be equally pertinent to all. The best that can be hoped is that each of you will recognize some of the references as applicable to his own case, and that everyone will find that at least a ray of new light has been shed on his problems.

If you will recall the definition of management which I gave earlier, you will note that I mentioned four processes through which management makes itself effective; namely, planning, organizing, coordinating and controlling. It is scarcely possible to assess the importance of these four steps, for each of them is essential; moreover, each merges into the other to make a complete and well-integrated whole. Through the utilization of these processes, it was stated that the human and material resources of the enterprise were directed to the achievement of a predetermined objective. Here we have one of the most important concepts in management the idea of a predetermined objective.

Sometimes we encounter businesses which are organized without a great deal of planning, chiefly because the field is one in which other businesses appear to be operating profitably. Often the only objective of such newcomers is to try to get as much business as possible away from the older units in the industry. Businesses of this type are usually headed toward disaster, for they have little knowledge of the elements of cost involved in building up a lasting organization and are apt to be over-optimistic about the outlook for sales. These businesses not only carry with them the seeds of their own destruction, but they are a thorn in the side of companies which are honestly endeavoring to meet all the responsibilities and obligations of management.

Planning For Profit

Every business should have constantly before it a predetermined objective, stated in concrete terms: so much business, so much expense, so much profit. The figures which are set must not, of course, reflect wishful thinking. They have to be derived as a result of a thorough-going analysis of operating costs and market characteristics, and they must be rooted in experience. A management technique has been devised which, with the use of such figures, enables the executives of a business to determine, by reading a chart, what volume of sales must be secured to cover expenses, and what percentage of profit should be earned at a given volume of sales.

The construction of a chart of this kind involves considerable delving into the accounts and costs of the business for a period of years in the past. Moreover, the findings have to be periodically corrected by appropriate adjustments to reflect changes in the various items of cost, as well as adjustments which, because of market conditions, may have to be made in mark-up. While much detailed work must be done before the chart is ready for use, it amply proves its value as an operating tool, for it enables management intelligently to set its objective and to determine, in advance, what it needs to accomplish in order that the desired profits may be realized.

Budgetary Control

When the overall objective has been established, budgetary planning may be undertaken for its realization. Such planning has to be comprehensive and broken down to the smallest detail. It has to cover every function and activity of the business, beginning with sales, and working through finance, production and the service activities. It has, on the one hand, to set forth every item of cost, both fixed and variable, and, on the other, to apportion sales among the various products, territories and salesmen.

The preparation of a budget should enlist the cooperation of all executives and department heads. Since they are responsible for the results of the various departments, they should be given the opportunity of estimating in advance how much they require in labor, machinery and tools, materials and supplies, to produce those results. Moreover, they should know beforehand what charges for overhead are to be made against their departments.

Once the budget has been approved, all efforts of the organization should be directed toward its realization, for the final profit showing is predicated upon the achievement of budgetary estimates. To be sure, certain changes in the budget may be made for practical reasons throughout the year, but such adjustments must always remain within the framework of the plan. It is apparent that any major deviation will have a material influence on earnings. The budget affords a way of checking accomplishment periodically and of compensating, before it is too late, for

failure to attain the desired results in any activity of the organization.

It will be seen that the two management devices which have been described, the profit-chart and the budget, both involve the process of planning, as far as their preparation is concerned. With respect to use, however, both may be regarded as tools of control. Lacking them, many a business has, without knowing it, fought a losing struggle by attempting to operate in an area where it was impossible under any conditions to earn a profit. The simple expedient of representing operating facts graphically so that the management may know at all times how great a volume of business it is required to do in order to cover expenses and cross the "break-even" point into the area of profitable operation, should, therefore, be adopted by every organization which is convinced of the need for substituting facts for guesses in the conduct of its business. Supplementing this, budgetary procedure should be employed to facilitate the maintenance of operations at the desired objective, to provide a measure for gauging results, and to fix responsibility for attaining them.

Standard Cost Accounting

Behind these two mechanisms of control lies a third, on which both of them are dependent for accuracy. I refer to cost accounting. No business can plan effectively for profit if it does not have in operation a method whereby accurate account can be kept of its costs of operation. The more competitive the business, the more essential does it become to follow such a procedure. Since a standard method of cost accounting has already been worked out for this industry, I shall not elaborate the subject here, except to urge upon each of you the importance of adopting the plan in your own company.

It will make it possible for you to determine how far every operation on every job has varied from the standard which should have been attained, and to discover which departments of the business are not performing in accordance with established norms. In this way, costs can be controlled and steps can be taken to correct unfavorable conditions before they become serious and threaten to endanger profits.

The adoption of standard cost procedure will also enable you to establish equitable differentials of price for different lengths of run, to determine whether the prices called for by your costs are in line with the market, and to ascertain on which items of your product line the greatest percentage of profit can be earned. By making you more cost conscious, it will go a long way toward preventing the pernicious practice of selling below cost, a point to which I shall recur in a moment. Under present conditions of competition, it is almost essential that sound cost accounting procedure be followed in every manufacturing business. To attempt to operate without it is to deprive oneself of one of the most useful of modern tools of management.

Sales Problems

Let me turn now from subjects of overall character to the specific field of sales, which, I have no doubt, constitutes one of your major problems. The processes of manufacture and the techniques of control have become so standardized and universally available, that the function of sales seems to offer the greatest opportunity for putting to use such originality, ingenuity and technical ability as the business can muster. It is, doubtless, to a large extent the variation in sales objectives, methods, effort and ability, rather than any special skill in production, that determines the differences in progress of the individual companies here represented.

If that is so, then anything which can be done to stimulate the sales force should have a wholesome effect on the business. The steps which can be taken will vary greatly among the member companies of this association, but even the smallest may well bear in mind that size does not afford any monopoly on brains. Every company, large or small, should set aside some allowance in its budget for sales research, which will provide its salesmen with facts, ideas, suggestions and leads for their guidance.

Selling in your industry has long since passed the stage of order-taking. Even a dependable price policy, coupled with high quality of service in performance, important as these are in cultivating and holding trade, no longer suffice to capture the most lucrative business. The salesmen must approach prospects with promotional ideas which will interest them by virtue of their originality and profit-making possibilities. While such ideas may originate with the salesmen themselves, they cannot always be worked out in detail by them. Moreover, there is much to be gained by having someone (or in larger companies a department) whose time is not occupied in active selling, constantly at work making market analyses, analyzing customers' accounts, studying consumer needs, investigating the merits of allied or competitive processes, thinking up new uses to which photo-lithography can be put, and discovering new classes of users for its products. Even in a small company, this is a full-time job which should easily pay its own way by opening up new avenues of sales.

Pricing for Profit

Another problem of sales, on which I have already touched, is that of pricing. That it is one of the most important, as well as most difficult, in an industry such as this, where the business is all to order, cannot be questioned. The desire to add a new account, to keep the machines busy, to increase volume, or merely to win business away from a competitor, is unfortunately too often permitted to overshadow sound considerations of cost, profit and a fair market price. The value of standard cost accounting in determining prices below which it is unprofitable to accept business has already been empha-

sized. If every company within this association would adhere unfailingly to the policy that it will accept only such business as carries a reasonable profit on its own account, disregarding expectations of future business or considerations of keeping its plant fully occupied, a long stride forward would be taken, not only toward increasing its own profits, but toward the elevation of conditions in the industry as a whole. Taking business at a loss helps no one and, in the end, only brings the industry, and the company itself, into disrepute.

Compensation of Salesmen

Before leaving the subject of sales, I wish to refer briefly to compensation of salesmen. This is a subject concerning which a great deal of research has been carried on by industries of all kinds. The important element in any plan of salesmen's compensation is the incentive factor. Whether the commission form of payment is followed, or salary and bonus, or straight salary, the incentive should be so adjusted that while the salesman is motivated to produce as great a volume of profitable sales as possible, the unit cost of sales to the company will decrease with volume. This is an essential principle to incorporate into all compensation plans. Moreover, so as to encourage salesmen to concentrate upon selling the more profitable lines, the incentive feature should be so devised that it bears a direct relation to the profit margin on the various items of product.

Although values in business, as in other fields of human endeavor have undergone severe changes in recent years, it is still true that lasting success must be founded upon the production of a meritorious product. I do not wish to be understood as saying that success follows in direct ratio with the merits of the product, for such a statement would be far from true. There are so many other factors of management that play a part in shaping accomplishment that often the inherent worth of the product is subordinated to them. Nevertheless, I am convinced that the right way to build a business which will achieve enduring, rather than spectacular, success, is to be guided by the objective of giving honest value.

To do that and at the same time compete in the market with products of lesser value, calls for production management of superior quality. The same machinery is available to all, and all can tap the same sources of labor. Wages and working conditions are tending constantly to greater uniformity. Even with respect to the purchase of materials, the position of the small organization has been protected by law against that of the larger one. Accordingly, whatever advantages can be gained by individual units within the industry must be derived from the skill of management. They must come from better handling and utilization of materials, better routing and scheduling of work, closer coordination of sales with production, better labor management, improved processes and techniques, and elimination of waste.

All these present manufacturing problems of great importance and considerable difficulty. So much has already been accomplished in raising the levels of effectiveness in the sphere of production, that the margin of opportunity for improvement seems indeed to have been narrowed. Nevertheless, there is certainly no plant represented here in which maximum potential accomplishment has been reached with respect to all of the factors enumerated. Indeed, since we are living in a highly dynamic and not a static world, there will always be room for improvement and need for change.

The business organization which is not constantly alert to this condition and which does not make provision for continuous critical inspection of its manufacturing methods, tuning up of its operations and improvement of its product, will soon find itself outdistanced by competitors. The management which is more flexible, more receptive to improved methods, keener to utilize new materials and more skilled in perfecting new processes and products will always have competitive advantage. Therefore, in production management, as in sales management, some provision should be made by even the smallest organization for carrying on a program of research designed to keep the company at least abreast of management progress in its own and allied industries.

Industrial Cooperation for Better Management

What has been said thus far has had reference to what the individual company can do to maintain profits through better management. It has, to be sure, only scratched the surface of that subject, and has, perforce, left much unsaid that may be of equal importance with the topics discussed.

Maintenance of profits in an industry is not altogether an individual matter. Some steps directed toward that end can better be undertaken through group, than through company, activity. They derive strength and authority from the very unity of purpose and action of all members of the group. In return, the benefits are general, each member sharing in the joint product, which none could have developed alone.

One of the major fields of activity which can be carried on by the industry as a whole, through an association such as this, is that of public relations. The sales job of every company in the industry can be facilitated by forthright and intelligent promotional efforts directed toward making potential users of photo-lithography conscious of the characteristics and merits of that process. You have the natural advantage of a process which, for certain types of work, is the most effective and economical that can be utilized. You have a group of responsible companies who are striving to give service of high quality. If the burden of publicizing that process and its distributors is left entirely in the hands of the individual compa..ies, the result will be more expensive and less effective than could be secured by joint action.

I am told that the purpose of your association is largely educational. To that end you have already had a standard cost accounting procedure worked out for the membership, which is proving highly satisfactory to those who are following it. There is no doubt that great benefit would accrue to the whole industry if the elements of that plan were more universally applied so that every member might be guided in his estimating and pricing by true knowledge of his costs.

Without more information than I happen to possess of the present activities of the Association, I hesitate to suggest functions which it might assume in the interest of its membership. There is, however, a well defined service which any association can render in raising the level of business ethics and integrity among its members. The reputation of every unit in an industry is involved in the reputation of the industry as a whole; per contra, public opinion regarding the industry is built up from experience with the individual companies. If the industry has a reputation for price-cutting, for poor service, for sharp practice, every factor in the business suffers as a result, and selling is to that extent rendered more difficult. Co-operative action affords the only means through which business standards in an industry can be elevated.

The regulation of advertising practices and of speculative services undertaken in an effort to secure new business is another field in which cooperation on an industry-wide basis would redound to the benefit of all. Promotional costs can be carried beyond all reason if the industry permits itself to be imposed upon by its customers. In the end, of course, the customers must pay, but not always the unreasonable ones. In the meanwhile, a practice is built up which can prove very costly to the member organizations. Conditions of this kind can best be combated through joint counsel and concerted action.

Concluding Comments

In concluding this address, may I express my conviction that the maintenance of profits in this industry is purely and simply a question of good management. It is true that business conditions have not yet become stabilized, and that no one can foresee what lies ahead, either with respect to the level of general economic well-being or with regard to such specific subjects affecting business welfare as legislation, taxation and labor conditions. Moreover, in any forward look, the growing competition of other media of disseminating information, such as the radio and the screen are not to be overlooked.

Fundamentally, the fact remains that there will always be need for mass distribution of the printed word. The process by which your industry serves that need is one which at the present time gives you an advantage over certain others. Yours is the task of capitalizing that advantage by adapting the principles and techniques of the art and science of management to your use, to the end that you may better serve and better prosper.

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Reinish, Samuel S., C. P. A., 2 Lafayette St., New York, N. Y.

ACIDS
California Ink Co., Inc., 545 Sansome St., San Francisco, Calif.
Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.
National Offset Supply Co., St. Louis, Mo.,
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.

ADDRESSING AND MAILING SERVICES
Ardlee Service, Inc., 28 W. 23 St., New York, N. Y.
Gray, James Letter Shop, 215 E. 45th St., New York, N. Y.

AIR CONDITIONING EQUIPMENT
Offen, B. & Co., 608 S. Dearborn St., Chicago, Ill.

ALUMINUM PLATES
(See Plates)

ALBUMEN
California Ink Co., Inc., 545 Sansome St., San Francisco, Calif.
Holland, Thor, 7048 Jones Ave., N. W., Seattle, Wash.
Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.
Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.
National Offset Supply Co., St. Louis, Mo.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

ALIGNING PAPER
(See Vogeltype Paper)

AMMONIUM DICHROMATE
Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.

ARC LAMPS
(See Lamps—Arc)

ASPHALTUM
Hilo Varnish Corporation, 42-60 Stewart Ave., Brooklyn, N. Y.
International Printing Ink Corporation, 75 Varick St., New York, N. Y.
National Offset Supply Co., St. Louis, Mo.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

ARTISTS
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ARTISTS' SQUARES
Zoltan, John M., 833 Lyman Ave., Oak Park, Ill.

ARTISTS' SUPPLIES
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BELLOWS
United Camera Co., Inc., 1515 Belmont Ave., Chicago, Ill.

BENDAY AND SHADING MEDIUMS
(See Shading Mediums)

BINDINGS
Plastic—Brewer—Cantelmo Co., Inc., 118 E. 27th St., New York, N. Y.
Spiral—Spiral Binding Company, 148 Lafayette St., New York, N. Y.
Wire-O—Trussel Mfg. Co., Poughkeepsie, N. Y.
(See list of licensees in display advertisement)

BLANKETS
Bainbridge, Philip M. (Goodrich Rubber Blankets), 95 Madison Avenue, New York, N. Y.
California Ink Co., Inc., 545 Sansome St., San Francisco, Calif.
Ideal Roller & Mfg. Co., 2512 W. 24th St., Chicago, Ill.
International Printing Ink Corporation, 75 Varick St., New York, N. Y.
National Offset Supply Co., St. Louis, Mo.
Rapid Roller Co., Federal at 26th, Chicago, Ill.
Reed Roller & Supply Co., Inc., 415-417 Jackson St., San Francisco, Cal.
Roberts & Porter, Inc., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.

THE PHOTO-LITHOGRAPHER'S MANUAL

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TABLE OF CONTENTS

SELLING

Salesmanship, What Is?
Applications of Photo-Lithography
Photo-Lithographic Process, The
Selling Lithography
Selling, A Buyer Discusses
Increase Your Sales
Selling on Price or Quality Basis
Salesman and the Estimator, The
Follow Up the Estimate
Customers' Interest in Your Plant
Sales Opportunities
Illustration in Advertising
Sales Value of Color
Direct Advertising
Copyright Laws of U. S.
Salesmanship, Opportunities for
Getting Out a Promotion Piece
Selling Photo-Lithography
Many Sales Appeals Fulfilled By Color
Typewriter Composition, Sales Advantages of

PRODUCTION

Re-typing Department
Reproduction Proofs
Type, Selecting for Photo-Lithography
Type, Identifying and Measuring
Inks, Selecting Offset
Ink Supplies, Selecting
Lithographic Inks, Blacks
Lithographic Inks, Blues
Lithographic Inks, Reds
Lithographic Inks, Yellows
Lithographic Inks, Whites
Lithographic Inks, Properties of Secondary Colors
Lithographic Inks, Tints
Lithographic Inks, Varnishes
Lithographic Inks, Driers
Lithographic Inks, Overprinting
Lithographic Inks, Using Special-Stocks
Lithographic Inks, Problems
Lithographic Inks, Characteristic of Various Colors
Lithographic Inks, Properties of Various Ink Ingredients
Lithographic Inks, Testing for Light Fastness
Lithographic Inks, Complaints on Inks
Fundamentals of Photography
Photo-Mechanical Progress
Dot Etching
Technical Details of Reproductive Processes, The
Albumen Plate, Making An
Plate Finishing Operations; Preservation of the Press
Deep Etch Methods, Presentation of
Plate Graining, Lithographic
Press, Operating the Lithographic
Rubber Blankets for the Offset Press
Rubber Rollers
Rollers for Photo-Lithography
Press, Operating a Hoe

MANAGEMENT

Centralized Production Control System, A
Office Routine, Handling
Superintendent Has Real Responsibility, The
Personnel Administration
Negatives and Plates, Who Owns
Equipment, How to Size Up
Laying Out a Two-Press Plant
Depreciation, Know Your
Paper and the Photo-Lithographic Industry
Paper Calculator
Scheduling Work Through a Plant
Glossary of Terms

Sinclair & Carroll Co., Inc., 591 Eleventh Ave., New York, N. Y.
Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.
Vulcan Proofing Co., 58th St. and First Ave., Brooklyn, N. Y.

BRONZERS

Henschel Mfg. Co., Milwaukee, Wis.

CAMERAS

Agfa-Ansco Corp., Binghamton, N. Y.
California Ink Co., Inc., The, 545 Sansome St., San Francisco, Cal.
Eastman Kodak Co., 343 State St., Rochester, N. Y.
Lanston Monotype Machine Co., 24th at Locust, Philadelphia, Pa.
Levy, Max & Co., Wayne & Berkley, Philadelphia, Pa.
Litho Equipment & Supply Co., 215 W. Ohio St., Chicago, Ill.
Miles Machinery Co., 18 East 16th St., New York, N. Y.
Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Station, Chicago, Ill.
Pitman, Harold M., Co., 150 Bay St., Jersey City. N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Repro-Art Machinery Co., Wayne Ave. & Berkley St., Philadelphia, Pa.
Robertson, R. R., 1 N. Canal St., Chicago, Ill.
Sullebarger Co., E. T., 116 Nassau St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.
Zeiss, Carl, Inc., 485 Fifth Ave., New York, N. Y.

CARDBOARDS AND BRISTOLS

Wheelwright Papers, Inc., 230 Park Ave., New York, N. Y.

CARBON (ARC LAMP)

Pease Co., C. F., The, 809 N. Franklin St., Chicago, Ill.

CARBON PAPER RIBBONS

Remington Rand, Buffalo, N. Y.

CARBONS—Photographic

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.

CHEMICALS

Agfa-Ansco Corp., Binghamton, N. Y.
California Ink Co., Inc., The, 545 Sansome St., San Francisco, Calif.
Eastman Kodak Company, Rochester, N. Y.
Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.
La Motte Chemicals Products Co., 438 Light St., Baltimore, Md.
Mallinkrockdt Chemical Works, 3600 N. Second St., St. Louis, Mo.
Merck & Co., Inc., Rahway, N. J.
National Offset Supply Co., St. Louis, Mo.
Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Phillips & Jacobs, 622 Race St., Philadelphia, Pa.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.

COLOR CONTROL AND MEASURING EQUIPMENT

Huebner Laboratories, 202 E. 44th St., New York, N. Y.

COMPOSITION

Monsen, Thormod and Son, Inc., 740 N. Franklin St., Chicago, Ill.

COMPOSING MACHINES

Coxhead Corp., Ralph C., 17 Park Place, New York, N. Y.

CRAYONS-LITHO

Korn, Inc., Wm., 120 Center St., New York, N. Y.
Roberts & Porter, Inc., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

DAMPENING DEVICES

Goodrich, The B. F. Co., 570 S. Main St., Akron, Ohio.
International Press Cleaner & Mfg. Co., The, 112 E. Hamilton Ave., Cleveland, Ohio.
Wagner, Charles, Litho Machine Co., 51 Park Ave., Hoboken, N. J.

DEEP ETCH SUPPLIES

Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Schultz, H. J., 2230 N. Racine Ave., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

DICHROMATE—Ammonium Photo Granular

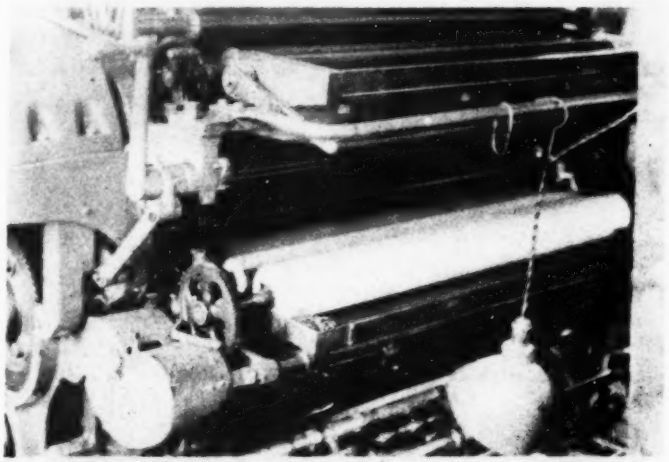
Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.

DIE CUTTING MACHINE—Semi-Automatic

Krause U. S. Corp., Karl, 55 Vandam Street, New York, N. Y.

BRIEFS

The Godfrey Roller Company has been experimenting for the past eight weeks with a material to be used in the covering of dampening rollers on Offset and Lithographic Presses. Working with the outstanding lithographers in Philadelphia, there has been developed Aquatex—a seamless tubing which has given desired results.



Aquatex has been adopted as standard material in many of the lithographing plants where it has been tried. Aquatex has been found advantageous because it is a seamless material and, consequently, will give a more even distribution of water. It may be applied by merely pulling the Aquatex over the roller base and securing the ends. A roller may be covered inside of three minutes, as there is no sewing or stitching. Aquatex will not give off the troublesome fuzz or lint which is often found on the plate or on the inking rollers, as Aquatex is made of a continuous thread and has no ends.

There is as much of an advancement in the new Aquatex process as there was when rubber rollers replaced the old type leather rollers for inking in the Offset and Lithographic Industry.

The Atlas Electric Devices Co. of Chicago, manufacturer of the well known Solar-Lite Arc Lamps, is now furnishing an apparatus that actually limits the amount of current consumed by an A. C. arc lamp.

This apparatus is known as the Atlas Choke Coil. It is a reactor and when connected in series with the arc lamp it actually prevents the lamp from using more current than necessary. The arc lamp still maintains its rated ampere capacity and arc flame voltage but the current registered in the meter is only that actually used. Arc Lamps used on A. C. can be operated at a great saving in power bills. The saving is from 1/3 to more than 1/2 depending upon the type of lamp and voltage.

Atlas Choke Coils are built like heavy duty transformers. Asbestos covered wire is used to allow continuous

DRIER—Paste and Liquid

Indiana Chemical & Mfg. Company, Indianapolis, New York City, Chicago.

DRYING OVENS

Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

DRYERS

Carter, C. W. H., 100 Varick St., New York, N. Y.
Hilo Varnish Corporation, 42-60 Stewart Ave., Brooklyn, N. Y.
Sinclair & Valentine Co., 11 St. Clair Pl. New York, N. Y.

DYNAMOS—MOTORS—PRESS DRIVES AND ELECTRICAL CONTROL EQUIPMENT

American Type Founders Sales Corp., 200 Elmora, Ave., Elizabeth, N. J.
General Electric Co., Schenectady, N. Y.
Kimble Electric Co., W. 14th St. & S. Damen Ave., Chicago, Ill.
Northwestern Electric Co., 408 S. Hoyne, Chicago, Ill.
Robbins & Meyers, Inc., Springfield, Mo.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

ENVELOPES

Dayton Envelope Co., Dayton, Ohio.

ETCHES

Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

FADE-O-METER

Atlas Electric Devices Co., 361 W. Superior St., Chicago, Ill.

FILMS

Agfa Ansco Corp., Binghamton, N. Y.
California Ink Co., Inc., The, 545 Sansome St., San Francisco, Cal.
Eastman Kodak Co., Rochester, N. Y.
Gevaert Co. of America, Inc., The, 423 W. 55th St., New York, N. Y.
Haloid Co., The, 6 Haloid St., Rochester, N. Y.
Hammer Dry Plate & Film Co., Ohio Ave. & Miami St., St. Louis, Mo.
Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Polygraphic Co. of America, 310 E. 45th St., New York, N. Y.

FLANNEL

Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Gevaert Co. of America, Inc., The, 423 W. 55th St., New York, N. Y.
International Printing Ink Corporation, 75 Varick St., New York, N. Y.
National Offset Supply Co., St. Louis, Mo.
Roberts & Porter, Inc., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

FOLDING MACHINERY

Baum, Russell Ernest, 615 Chestnut St., Phila., Pa.
Dexter Folder Co., 28 W. 23rd St., New York, N. Y.

GLYCERINE

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.

GRAINING FLINT

New England Quartz Co. of New York, 450 Seventh Ave., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

GRAINING AND REGRAINING—Zinc, Aluminum, Glass and Multilith Plates

Chicago Litho Plate Graining Co., 214-16 N. Clinton St., Chicago, Ill.
Illinois Litho Plate Graining Co., 913-921 W. Van Buren St., Chicago, Ill.
International Printing Ink Corporation, 75 Varick St., New York, N. Y.
Lithographic Plate Graining Co., 41 Box St., Brooklyn, N. Y.
McKenna, James J., 1015 Callowhill St., Phila., Pa.
National Offset Supply Co., 613 N. Broadway, St. Louis, Mo.
Photo Litho Plate Graining Co., Inc., 1207 S. Highland St., Baltimore, Md.
Reliable Lithographic Plate Co., Inc., 17 Vandewater St., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Western Litho Plate & Supply Co., 1019 Soulard St., St. Louis, Mo.

GRAINING MACHINES

Fritsche, R., 145 Hudson St., New York, N. Y.
Hoe, R., & Co., Inc., 910 E. 138th St., at East River, New York, N. Y.
McKinley Litho Supply Co., 1600 John St., Cincinnati, O.
Zarkin Machine Co., 335 E. 27th St., New York, N. Y.

GRAINING QUARTZ FLINT

New England Quartz Co. of New York, 450 Seventh Ave., New York, N. Y.

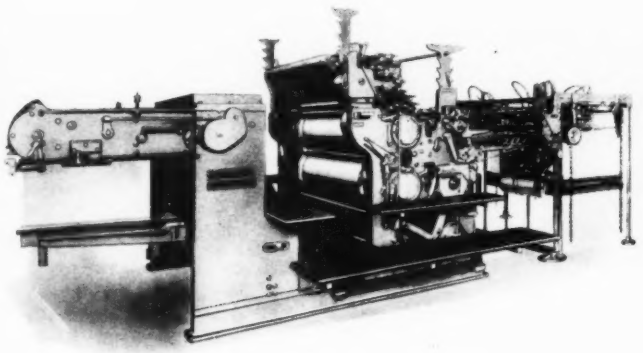
GUM ARABIC

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.

duty and the units are much smaller than a rheostat of similar capacity.

They are provided with voltage adjustment taps for a liberal range and the arc lamp can be accurately set to local voltage conditions from 100 to 125 volts on the 110 volt size and from 200 to 250 on the 220 volt size.

The choke coils do not operate on D. C., so the Solar-Lites are equipped with the sturdy oversize Atlas Iron Clad Rheostats with their ample connectors and resistance wire. Atlas Iron Clad Rheostats contain the best nickle copper alloys in order to guarantee uniform light even on long exposures. This feature combined with the "floating arc" on Solar-Lites has earned them a well deserved place in the graphic arts.



The rapid growth of Acme Photo-Offset, Inc., New York, N. Y., has been further evidenced by the recent installation of the Hoe Super-Offset Press, the 42" x 55½" size illustrated above.

Lithographic Technical Foundation in Need of Halftone Screens

The Research Department of the Lithographic Technical Foundation is in need of 120, 133, and 150-line screens for its studies of halftone and color-separation photography. It has a 17 x 17-inch process camera but lacks satisfactory screen equipment. Rectangular screens of any size between 8 x 10 and 17 x 17 inches can be used but they must be in first-class condition. Circular screens would be an advantage but are not absolutely necessary.

It is hoped that shops interested in the work of the Foundation will check their inventories of halftone screens, and that spare screens may be found which can be donated for the proposed work. Communications should be addressed to the Department of Lithographic Research, University of Cincinnati, Cincinnati, Ohio.

National Offset Supply Co., St. Louis, Mo.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

HAND ROLLERS

Roberts & Porter, Inc., 100 Lafayette St., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.

HUMIDIFICATION

Advance Mfg. Co., Inc., Louisville, Ky.
Carrier Engineering Co., 850 Frelinghuysen Ave., Newark, N. J.
Lorenz & Co., Inc., Louis, Rose & Duane Sts., New York, N. Y.
Southworth Machine Co., 30 Warren Ave., Portland, Maine.

HYDROQUINONE

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.
Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

INK COMPOUNDS

Indiana Chemical & Mfg. Company, Indianapolis, New York City, Chicago.

INKS

Acheson Ink Co., Inc., 142 Skillen St., Buffalo, N. Y.
American Printing Ink Co., Div. General Printing Ink Corp., 2314 W. Kinzie St., Chicago, Ill.
August Corp., Charles, The, 416 Orleans St., Chicago, Ill.
Bowers Printing Ink Co., 711 W. Lake St., Chicago, Ill.
Braden-Sutphin Ink Co., 1736 E. 22nd St., Cleveland, Ohio
California Ink Co., 545 Sansome St., San Francisco, Calif.
Ceb Printing Ink Co., Chicago, Ill.
Crescent Ink & Color Co. of Penn., 464 N. 5th St., Phila., Pa.
Driscoll, Martin & Co., 610 Federal St., Chicago, Ill.
Flint Ink Co., Howard, 2545 Scotten Ave., Detroit, Mich.
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Gaetjens, Berger & Wirth, Inc., 35 York Street, Brooklyn, N. Y., and 538 S. Clark St., Chicago, Ill.
Herrick Ink Co., Inc., Wm. C., 325 W. 34th St., New York, N. Y.
Huber, Inc., J. M., 460 W. 34th St., New York, N. Y.
International Printing Ink Corp., 75 Varick St., New York, N. Y.
Johnson & Co., Inc., Charles Eneu, 10th & Lombard Sts., Phila., Pa.
Kohl & Madden Printing Ink Co., 731 Plymouth Court, Chicago, Ill.
Levey Co., Inc., Frederick H., 59 Beekman St., New York, N. Y.
Mayer Co., Inc., Robert, 1107 Grand St., Hoboken, N. J.
National Offset Supply Co., St. Louis, Mo.
Prescott Co., H. S., 470 Atlantic Ave., Boston, Mass.
Reed Roller & Supply Co., Inc., 415 Jackson St., San Francisco, Cal.
Roberts, Inc., Lewis, 72 Union St., Newark, N. J.
Roosen Co., H. D., Ft. 20th-21st St., Brooklyn, N. Y.
Schwarm & Jacobus Co., The, 1216 Jackson St., Cincinnati, Ohio
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.
Sinclair & Carroll Co., Inc., 591 11th Ave., New York, N. Y.
Sinclair & Valentine Co., Inc., 11-21 St. Clair Pl., New York, N. Y.
Sleight Metallic Ink Companies, Inc., 538 N. Third St., Phila., Pa.
Triangle Ink & Color Co., Inc., 26 Front St., Brooklyn, N. Y. (also Boston, Mass., Baltimore, Md., and St. Louis, Mo.).
Williams Co., Inc., R. S., 257 W. 17th St., New York, N. Y.
Winslow Ink Corp., 124-132 White St., New York, N. Y.

INK WAX REDUCER (Smoothol Ink Wax)

Smith Co., Francis X., 952 E. 93rd St., Brooklyn, N. Y.

INSURANCE—Workmen's Compensation

N. Y. Printers & Bookbinders Mutual Insurance Co., 147 Fourth Ave., New York, N. Y.

LITHOGRAPHIC ABSTRACTS

Abstracts of important current articles, patents, and books, compiled by the Research Department of the Lithographic Technical Foundation, Inc. These abstracts represent statements made by the authors of articles abstracted, and do not express the opinions of the abstractors or of the Research Department. Mimeographed lists have been prepared of (1) Periodicals Abstracted by the Department of Lithographic Research, and (2) Books of Interest to Lithographers. Either list may be obtained for six cents, or both for ten cents (in stamps). Address the Department of Lithographic Research, University of Cincinnati, Cincinnati, Ohio.

Photography and Color Correction

Reproducing Halftone Prints. M. Leeden. *Modern Lithographer and Offset Printer*, 33, No. 7, July 1937, pp. 131–2. The causes and prevention of moiré pattern in reproduction of halftone copy are discussed. The best procedure for elimination of moire is to make a negative on an ordinary plate (not a process plate), make an enlargement from this negative, partially covering the highlights with air-brush tint and drawing in outlines to the correct tone values, and make the screen negative with the screen angle adjusted to the lines and dots of the original print.

Photographic Industry in 1936. A. Batley. *The Industrial Chemist and Chemical Manufacturer*, 13: 21–2, January 1937. A review is presented of developments in the industry during the past two years, with special reference to color processes. (*Monthly Abstract Bulletin of Eastman Kodak Company*, 23, p. 140 (1937).)

Planographic Printing Surfaces and Plate Preparation

Method of and Apparatus for Preparing Printing Surfaces. E. S. Ballard. *U. S. Patent* No. 2,069,001 (January 26, 1937). A method of preparing a printing surface by use of an apparatus embodying an elastic transfer member which comprises the steps of applying a transfer coating on a master surface bearing the desired image, bringing the surface of the elastic transfer member into contact with said master surface by the direct application of fluid pressure thereto to cause a uniform simultaneous transfer of said entire coating to the surface of said elastic member, separating said surfaces and thereafter bringing the surface of said elastic member carrying the transferred image into contact with the surface to be prepared by the direct application of fluid pressure thereto to cause the uniform simultaneous transfer of said coating substance to said printing surface.

LAMPS, ARC

Atlas Electric Devices Co., Inc., 361 W. Superior St., Chicago, Ill.
Gelb Co., Joseph, 250 W. 54th St., New York, N. Y.
Macbeth Arc Lamp Co., 875 N. 28th St., Phila., Pa.
Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Station, Chicago, Ill.
Pease Co., C. F., The, 809 N. Franklin St., Chicago, Ill.
Sullebarger Co., E. T., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.

LENSES

Bausch & Lomb Optical Co., 140 Smith St., Rochester, N. Y.
Goerz American Optical Co., C. P., 317 E. 34th St., New York, N. Y.
Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Station, Chicago, Ill.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Zeiss, Carl, Inc., 485 Fifth Ave., New York, N. Y.

LINE-UP AND REGISTER MACHINES, SYSTEMS AND TABLES

Craftsmen Line-Up Table Corp., 49 River St., Waltham, Mass.
Hamilton Mfg. Co., Inc., 1315 18th St., Two Rivers, Wis.
Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.
Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., & Scranton, Pa.

LITHO DEVELOPING INK

International Printing Ink Corporation, 75 Varick St., New York, N. Y.
Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.

LITHO ENGRAVING AND DRAWINGS

Litho Trade Service Studio, 538 S. Clark St., Chicago, Ill.

LITHOGRAPHIC EQUIPMENT DISTRIBUTORS

Heuslein, R. J., Co., 11 S. Meridian St., Indianapolis, Ind.

MACHINISTS

Gegenheimer, Inc., Wm., 78 Roebling St., Brooklyn, N. Y.
Lorenz, Louis, & Co., Inc., Rose and Duane Sts., New York, N. Y.
Rathbun & Bird Co., Inc., 85 Grand St., New York, N. Y.

MAGNIFYING AND REDUCING GLASSES

Bausch & Lomb Optical Co., 635 St. Paul St., Rochester, N. Y.
Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Repro-Art Machinery Co., Wayne Ave. & Berkeley St., Phila., Pa.
Zeiss, Inc., Carl, 485 Fifth Ave., New York, N. Y.

MAKE-UP TABLES

Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.
Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.

MOLESKIN AND MOLLETON

International Printing Ink Corporation, 75 Varick St., New York, N. Y.
McKinley Litho Supply Co., 1600 John St., Cincinnati, Ohio
Roberts & Porter, Inc., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.

MOTORS AND CONTROLLERS

Cline Electric Mfg. Co., 211 W. Wacker Drive, Chicago, Ill.

NEGATIVE MATERIALS

Agfa Ansco Corp., Binghamton, N. Y.
Cramer Dry Plate Co., G., Lemp & Shenandoah Ave., St. Louis, Mo.
Eastman Kodak Company, Rochester, N. Y.
Gevaert Co. of America, Inc., The, 423 W. 55th St., New York, N. Y.
Haloid Co., The, 6 Haloid St., Rochester, N. Y.
Hammer Dry Plate & Film Co., Ohio Ave. & Miami St., St. Louis, Mo.
Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Polygraphic Company of America, Inc., 310 E. 45th St., New York, N. Y.

OFFSET PLATE MAKING SERVICE

(See Plate Making Service)

Important Information for Every Platemaker. J. M. Williams. *Lithographers' Journal*, 22, No. 5, Aug. 1937, pp. 210, 220. The information contained in Research Bulletin No. 6, of the Lithographic Technical Foundation, "The Albumin Process of Photo-lithography," is of primary importance to the lithographer. The following items are discussed: (1) a method for dissolving the albumin to eliminate insoluble matter, (2) a method of accurately controlling the proportions of dichromate and albumin in the coating solution, and (3) the adjustment of exposure to compensate for the effects of variation in relative humidity.

Practical Considerations of Plate Graining. "Inker." *Modern Lithographer and Offset Printer*, 33, No. 7, July 1937, pp. 132, 136. Proper plate preparation and paper conditioning are the basis of good lithography. The evaluation of grain on plates, storage before and after use, and the washing and sensitizing of plates are taken up in considerable detail.

Going Blind and Walking Off. L. R. Meloy. *The Photo-Lithographer*, 5, No. 8, Aug. 1937, pp. 49–50. The importance of cleanliness, accuracy, and thoroughness in offset work are stressed. Proper distribution of the coating on the plate, temperature and acidity of the water fountain, care in protecting the image during etching, the use of a suitable etch, and control of the amount of water on the plate are discussed in their relation to prevention of blinding and walking off. Seventeen causes of these difficulties are listed, and formulas for ink base, developing ink, and an asphaltum solution are given.

Equipment and Materials

Faulty Pressure. C. F. Geese. *National Lithographer*, 44, No. 8, Aug. 1937, p. 30. The difficulties caused by excessive pressure are wear on plates, ink smudging, excessive stretch of paper, faulty dampening, greasing of the plate, and streaks. The correction of faulty pressures is described in detail, and the recommendation is made that the words "check your pressure" be stamped on each plate going to the press.

Printers' Blankets. International Latex Processes, Ltd. *British Patent* No. 462,101 (Sept. 26, 1936). A laminated article comprises a base, an outer coating of material resistant to rubber solvents and swelling agents and comprising a butadiene or substituted butadiene polymer or olefine polysulfide plastic, and between them, a cushioning layer of rubber obtained from a rubber latex composition.

Independent Dehumidification. L. Ourusoff. *Refrigerating Engineer*, 32, pp. 327–31 (1936). The design and performance of a silica gel dehumidifying unit in an air-conditioning installation are discussed. (*Chemical Abstracts*, 31: 3 (1937).)

OPAQUE AND DEVELOPING INK

Acheson Ink Co., Inc., Skillen St., Buffalo, N. Y.
Artists' Supply Co., 7610 Decker Ave., Cleveland, Ohio
International Printing Ink Corporation, 75 Varick St., New York, N. Y.
Okie, Francis G., 247 S. Third St., Phila., Pa.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

PAPER

Aetna Paper Co., The, Dayton, Ohio
American Writing Paper Co., Holyoke, Mass.
Beckett Paper Co., The, Hamilton, Ohio
Brown Company, Portland, Maine
Burgess Cellulose Co. (Div. of C. F. Burgess Laboratories, Freeport, Ill.)
Cantine Co., Martin, Saugerties, N. Y.
Case & Risley Press Paper Co., Oneco, Conn.
Champion Paper & Fibre Co., Hamilton, Ohio
Chemical Paper Mfg. Co., Holyoke, Mass.
Chillicothe Paper Co., The, Chillicothe, Ohio
Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.
Crocker-McElwain Co., Holyoke, Mass.
Dill & Collins, Inc., Richmond & Tioga Sts., Philadelphia, Pa.
Falulah Paper Co., Fitchburg, Mass.
Fraser Industries, Inc., Graybar Bldg., New York, N. Y.
Hammermill Paper Co., Erie, Pa.
Hollingsworth & Whitney Co., 140 Federal St., Boston, Mass.
Howard Paper Co., Urbana, Ohio
International Paper Co., 220 E. 42nd St., New York City, N. Y.
Maxwell Paper Co., Franklin, Warren County, Ohio
Munising Paper Co., Munising, Mich.
Neenah Paper Co., Neenah, Wis.
Rhinelander Paper Co., Rhinelander, Wis.
Riegel Paper Co., 342 Madison Ave., New York, City, N. Y.
Strathmore Paper Co., W. Springfield, Mass.
Warren, S. D. Co., 89 Broad St., Boston, Mass.
Watervliet Paper Co., Watervliet, Mich.
West Virginia Pulp & Paper Co., 230 Park Ave., New York City, N. Y.
Whiting Geo. A. Paper Co., Menasha, Wis.

PAPER CONDITIONING EQUIPMENT

Advance Mfg. Co., Inc., Louisville, Ky.
Southworth Machine Co., 30 Warren Ave., Portland, Maine
Strachan & Henshaw Co., Ltd., 7th at Grange St., Philadelphia, Pa.

PAPER DISTRIBUTORS

Bulkley-Dunton & Co., 295 Madison Ave., New York City, N. Y.
Forest Paper Co., Inc., 334 Hudson St., New York, N. Y.
Lathrop Paper Co., 155 Perry St., New York, N. Y.
Linde Paper Co., J. E., 84 Beekman St., New York, N. Y.
Marquardt & Co., Inc., 153 Spring St., New York, N. Y.
Millar & Co., Inc., Geo., W., 284-290 Lafayette St., New York, N. Y.
Miller & Wright Paper Co., 200 Varick St., New York, N. Y.
Royal Paper Corp., 11th Ave. & 25th St., New York, N. Y.

PARAFORMALDEHYDE—U. S. P.

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.
Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.

PHOTO COMPOSING MACHINES

Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.
Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Strachan & Henshaw Co., Ltd., 7th at Grange St., Philadelphia, Pa.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.

PHOTO LETTERING MACHINES

Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.

PLATE COATING EQUIPMENT

Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.
Zarkin Machine Co., 335 E. 27th St., New York, N. Y.

PLATE GRAINING MACHINES

Robertson, R. R., 400 W. Madison St., Chicago, Ill.
Wesel F. Mfg. Co., Inc., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.
Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

PLATE GRAINING MATERIALS

International Printing Ink Corporation, 75 Varick St., New York, N. Y.
New England Quartz Company of New York, 450 Seventh Avenue, New York, N. Y.
Seibold, Inc., J. H. and G. B., 47 Watts St., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

PLATE MAKING EQUIPMENT

California Ink Co., Inc., The, 545 Sansome St., San Francisco, Cal.

Lanston Monotype Machine Co., 24th at Locust St., Phila., Pa.
Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Monsen, Thormod and Son, Inc., 730 N. Franklin St., Chicago, Ill.
Rutherford Machinery Co. Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Strachan & Henshaw Co., Ltd., 7th at Grange St., Philadelphia, Pa.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.

PLATE MAKING SERVICE

California Ink Co., Inc., 545 Sansome St., San Francisco, Calif.
Chicago Litho Plate Graining Co., 214 N. Clinton St., Chicago, Ill.
Columbia Offset & Reproduction Corp., 2 Duane St., New York, N. Y.
Offset Engravers Associates, Inc., 42 E. 20th St., New York, N. Y.
Offset Printing Plate Co. of New York, Inc., 100 Bleecker St., New York, N. Y.
Offset Products Corporation, 103 Lafayette St., New York, N. Y.
Rightmire-Berg Co., 717 S. Wells St., Chicago, Ill.
Swart-Reichel, Inc., 461 Eighth Ave., New York, N. Y.
Stevenson Photo Color Separation Co., 222 W. Fourth St., Cincinnati, Ohio

PLATES—ALUMINUM, ZINC

Aluminum Co. of America, Gulf Bldg., Pittsburg, Pa.
American Zinc Products Co., Greencastle, Ind.
Edes Mfg. Co., The, Plymouth, Mass.
International Printing Ink Corporation, 75 Varick St., New York, N. Y.
Lithographic Plate Graining Co., 41 Box St., Brooklyn, N. Y.
Matthiessen & Hegeler Zinc Co., Ninth St., LaSalle, Ill.
National Litho Plate Co., The, 35 Meadow St., Brooklyn, N. Y.
National Offset Supply Co., St. Louis, Mo.
Photo-Litho Plate Graining Co., Inc., 1207 S. Highland St., Baltimore, Md.
Reed Roller & Supply Co., Inc., 415-417 Jackson St., San Francisco, Cal.
Reliable Lithographic Plate Co., Inc., 17 Vandewater St., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

PLATES—DRY

Eastman Kodak Company, Rochester, N. Y.
Gevaert Co. of America, Inc., The, 423 W. 55th St., New York, N. Y.
Hammer Dry Plate & Film Co., Ohio Ave. & Miami St., St. Louis, Mo.
Norman-Willets Co., 318 W. Washington St., Chicago, Ill.
Polygraphic Company of America, Inc., 310 E. 45th St., New York, N. Y.

PLATES—ZINC, COPPER and ALLOY (for Engravers)

Rolled Plate Metal Co., 210 Van Brunt St., Brooklyn, N. Y.

PRESSES—New

Griffiths Co., Inc., John, 145 Nassau St., New York, N. Y.
Harris-Seybold-Potter Co., 4510 E. 71st St., Cleveland, Ohio
Hoe, R., & Co., Inc., 910 E. 138th St., at East River, New York, N. Y.
Miehle Printing Press & Mfg. Co., 14th St., and S. Damen Ave., Chicago, Ill.
New Era Mfg. Co., 145 Nassau St., New York, N. Y.
Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.
Webendorfer-Wills Co., Inc., Mount Vernon, N. Y.
Willard Press Mfg. Co., 28 W. 23rd St., New York, N. Y.

PRESSES—Rebuilt Litho

Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

PRESS ROOM SPECIALTIES

Indiana Chemical & Mfg. Company, Indianapolis, New York City, Chicago

PROOF AND TEST PRESSES

Griffiths, John Co., Inc., 145 Nassau St., New York, N. Y.
Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.
Strachan & Henshaw Co., Ltd., 7th at Grange St., Philadelphia, Pa.

QUARTZ GRAINING SAND

New England Quartz Co. of New York, 450 Seventh Ave., New York, N. Y.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

REBUILT EQUIPMENT

Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

ROLLERS

American Type Founders Sales Corp., 200 Elmora Ave., Elizabeth, N. J.

Smooth Roller in Lithography. A. H. Reiser. *Printing Equipment Engineer*, 54, No. 5, Aug. 1937, pp. 50, 53, 67–8. The advantages of smooth rollers over grained rollers are ease of washing up, softness, uniformity of size, absence of seams, ease of installation (without need for breaking-in), and uniform application of ink. The advantage of the grained roller is its freedom from squeegee action, and the production of clean, sharp printing. Grained composition rollers have been developed to meet these requirements.

Paper and Ink

Simple Ink Adjustments. "E. J. T." *Modern Lithographer and Offset Printer*, 33, No. 7, July 1937, p. 140. The addition of "dopes" to ink rather than to the dampening water is recommended when ink and water are emulsifying to any large degree. The author discusses briefly the advantages and disadvantages of using magnesia, starch, paraffin, beeswax, and a mixture of wax and linseed oil. He prefers paste driers to the liquid driers, because the ink body is less affected.

Emulsoid Inks. G. S. Rowell. *U. S. Patent* No. 2,090,704 (Aug. 24, 1937). An emulsoid ink for planographic printing consisting of a pigmented varnish vehicle of a planographic ink and an aqueous ink-repellent composition containing an organic colloid in an amount sufficient to impart to the composition a viscosity higher than that of glycerine.

Printing Inks and Their Relation to Printing Processes. G. L. Riddell. *American Ink Maker*, 15, No. 8, Aug. 1937, pp. 21, 23, 25–6. The author discusses problems facing the ink industry. There is a need for (1) the development of methods for evaluating the print obtained and means for determining accurately the physical properties of inks and their relation to printing processes, (2) the study of the behavior of ink films on paper, and (3) the study of the drying properties of inks.

Characteristics and Applications of Phthalocyanine Blues. Anonymous. *American Ink Maker*, 15, No. 8, Aug. 1937, pp. 17–9, 26. The discovery, properties, and applications of the phthalocyanine blues are summarized. This type of dye is resistant to the action of strong acids, strong alkalies, reducing agents, mild oxidizing agents, heat, all solvents except concentrated sulfuric acid, and light. The color is a clean brilliant blue, only slightly inferior to the best peacock blues. The advantages of this type of pigment in letterpress inks, offset inks, gravure inks, and inks for a number of specialized purposes are discussed.

The Oil-Paper Relationship in the Printability of Paper. G. L. Larocque. *Pulp and Paper Magazine of Canada*, 38, (1937) pp. 77–84. The rate of penetration

Bingham Bros. Co., Inc., 406 Pearl St., New York, N. Y.
Bingham's Son Mfg. Co., Sam'l, Chicago, Ill.
Dayco Division, Dayton Rubber Mfg. Co., Dayton, Ohio
Ideal Roller & Mfg. Co., Inc., 2512 W. 24th St., Chicago, Ill., and 21-24 Thirty-ninth Ave., Long Island City, N. Y.
National Offset Supply Co., St. Louis, Mo.
Niles & Nelson, Inc., 75 West St., New York, N. Y.
Rapid Roller Co., Federal at 26th, Chicago, Ill.
Roberts & Porter, Inc., 100 Lafayette St., New York, N. Y., and 402 S. Market St., Chicago, Ill.
Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.
Vulcan Proofing Co., 58th St. & First Ave., Brooklyn, N. Y.

SCREENS—Halftone

Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Station, Chicago, Ill.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Repro-Art Machinery Co., Wayne Ave. & Berkeley St., Philadelphia, Pa.
Sullebarger Co., E. T., 116 John St., New York, N. Y., and 538 S. Clark St., Chicago, Ill.

SHADING MACHINES AND MEDIUMS

Ben Day, Inc., 118 E. 28th St., New York, N. Y.
Craftint Mfg. Co., 210 St. Clair Ave., Cleveland, Ohio
Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.

SODIUM SULPHITE ANHYDROUS PHOTO

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.
Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.

STARTERS AND CONTROLLERS FOR ELECTRIC MOTORS

Monitor Controller Co., Inc., 51 S. Gay St., Baltimore, Md.

STRIPPING TABLE

Miles Machinery Co., 18 E. 16th St., New York, N. Y.
Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.
Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

SULPHUR

Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.
National Offset Supply Co., St. Louis, Mo.
Pitman, Harold M., Co., 150 Bay St., Jersey City, N. J., and 51st Ave. and 33rd St., Chicago, Ill.
Sinclair & Carroll Co., Inc., 591 Eleventh Ave., New York, N. Y.

TAX CONSULTANTS

Kromberg & Associates, C. P. A.'s, J., 461 Eighth Ave., New York, N. Y.
Levess, Herbert H., C. P. A., 360 W. 23rd St., New York, N. Y.
Reinish, Samuel S., C. P. A., 2 Lafayette St., New York, N. Y.

TIME CLOCKS—RECORDERS AND STAMPS

International Time Recording Division of International Business Machines Corporation, 270 B'way, New York, N. Y.
Simplex Time Recorder Co., Inc., 50 S. Lincoln St., Gardner, Mass.

TRADE LITHOGRAPHERS

Hinson & McAuliffe Corp., 203 E. 12th St., New York, N. Y.

TRANSFER PAPER

International Printing Ink Corporation, 75 Varick St., New York, N. Y.
McKinley Litho Supply Co., 1600 John St., Cincinnati, Ohio
National Offset Supply Co., St. Louis, Mo.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.
Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.
Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.

TRANSFER PROOFS—TYPE IMPRESSIONS

Litho Typesetting Co., 325 W. Ohio St., Chicago, Ill.
Monsen, Thormod and Son, Inc., 730 N. Franklin St., Chicago, Ill.
New York Type Transfer Service, 561 Broadway, New York, N. Y.

TUSCHE

International Printing Ink Corporation, 75 Varick St., New York, N. Y.
Korn, Wm., Inc., 120 Center St., New York, N. Y.
National Offset Supply Co., St. Louis, Mo.
Senefelder Company, Inc., The, 32-34 Greene St., New York, N. Y.

under pressure of oil through paper was determined and a method was developed for determining the magnitude of the capillary pressure causing the natural penetration of oil into paper, and for determining the mean effective radius of the capillary pores. The results are compared with oil flotation measurements, and it is found that the oil flotation test and other similar methods depend upon the penetration of an excess of oil through the sheet, and are not a measure of the absorptiveness of the paper surface for printing ink. (*Patra Journal*, 1, No. 1, July 1937, p. 17.)

Sized Paper. G. Haywood. *U. S. Patent* No. 2,090,002 (Aug. 17, 1937). A smooth, bright book paper sheet having good ink receptivity formed from fibrous stock containing calcium sulfite as a filler to the extent of between 10 and 40 per cent of the weight of the sheet and sizing ingredients, all thoroughly intermixed, and having a surface size consisting essentially of one or more of the class consisting of starch, glue, and casein applied to at least one face thereof, said sized surface being calendered.

Studies upon the Smoothness, Porosity, and Printability of Paper with New Methods for Determination. F. M. Williams. *Paper Trade Journal*, 105, No. 8, Aug. 19, 1937, pp. 43–7. Barometric pressure is an important factor in measuring smoothness with testers of the air-flow type. Standard permanent test plates should be available for checking smoothness testing apparatus. Recommendations are made on the technique of smoothness and plane porosity measurements, and such measurements are considered important in evaluating the printability of paper.

Choosing the Right Paper. W. B. Wheelwright. *Paper and Printing Digest*, Aug. 1937, pp. 2–9. In choosing between uncoated and coated paper, a number of factors should be considered. Coated paper costs more, has greater bulk, greater tendency to crack or tear, requires more time for ink to dry, and may pick. If the quality of the halftone print is improved sufficiently to overbalance these factors, coated paper should be chosen. Types of paper adapted to various jobs are discussed, and diagrams are included.

General

Short Cuts to Efficiency (In Metal Decorating). W. N. Misuraca. *National Lithographer*, 44, No. 8, Aug. 1937, pp. 22, 24. Ways of reducing the time required for make-ready are discussed. The time spent in washing the press cannot be cut down below that necessary for a thorough cleansing. In setting the feeding mechanism to the size of the sheet, a thorough knowledge of what adjustments must be made cuts down the time required very considerably. The matching of color can be expedited

TYPEWRITER COMPOSITION

Gallant Service, Inc., 81 W. Van Buren St., Chicago, Ill.

Kopy Komposers, Bourse Building, Philadelphia, Pa.

TYPEWRITER RIBBONS

Carbon Paper or Fabric

Remington-Rand, Buffalo, N. Y.

TYPEWRITERS

Coxhead Co., Ralph C., 17 Park Place, New York, N. Y.

International Electric Writing Machines Division of International Business Machines Corporation, 270 B'way, New York, N. Y.

Remington-Rand, Inc., Buffalo, N. Y.

Royal Typewriter Co., 2 Park Ave., New York, N. Y.

Smith & Corona Typewriter, Inc., L. C, Syracuse, N. Y.

Underwood-Elliot-Fisher, 1 Park Ave., New York, N. Y.

VACUUM AND PRINTING FRAMES

Douthitt Corp., The, 650 W. Baltimore Ave., Detroit, Mich.

Lanston Monotype Machine Co., 24th at Locust, Phila., Pa.

Miles Machinery Co., 18 E. 16th St., New York, N. Y.

Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Station, Chicago, Ill.

Robertson, R. R., 400 W. Madison St., Chicago, Ill.

Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.

Sweigard Ideal Co., 6122 N. 21st St., Phila., Pa.

Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y., and Scranton, Pa.

Zarkin Machine Co., 335 E. 27th St., New York, N. Y.

VARNISH

Ault & Wiborg Corporation, 75 Varick St., New York, N. Y.

Carter, C. W. H., 100 Varick St., New York, N. Y.

Hilo Varnish Co., 42-60 Stewart Ave., Brooklyn, N. Y.

National Offset Supply Co., St. Louis, Mo.

Roosen Co., H. D., Ft. of 20th & 21st St., Brookply, N. Y.

Siebold, Inc., J. H. & G. B., 47 Watts St., New York, N. Y.

Sinclair & Carroll Co., Inc., 591, Eleventh Ave., New York, N. Y.

Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.

VARNISHES—Overprint

Carter, C. W. H., 100 Varick St., New York, N. Y.

Gaetjens, Berger & Wirth, Inc., 35 York Street, Brooklyn, N. Y., and 538 S. Clark St., Chicago, Ill.

Hilo Varnish Corp., 42 Stewart Ave., Brooklyn, N. Y.

Indiana Chemical & Mfg. Company, Indianapolis, New York City, Chicago.

International Printing Ink Corporation, 75 Varick St., New York, N. Y.

Sinclair & Carroll Co., Inc., 591 11th Ave., New York, N. Y.

Sinclair & Valentine Co., 11 St. Clair Pl., New York, N. Y.

VIBRATION ABSORBING AND WEAR RESISTING FLOORS AND FOUNDATIONS

Korfund Co., Inc., The, 48-15 32nd Place, Long Island City, N. Y.

VOGELTYPE ALIGNING PAPER

Vogeltype Co., 24 Commerce St., Newark, N. J.

WASHUP EQUIPMENT

Gegenheimer, Inc., Wm., 78 Roebling St., Brooklyn, N. Y.

International Press Cleaner & Mfg. Co., The, 112 E. Hamilton Ave., Cleveland, Ohio.

WATER FOUNTAIN ETCH

International Printing Ink Corporation, 75 Varick St., New York, N. Y.

WEAR RESISTING FOUNDATIONS

(See vibration absorbing products)

WET PLATE MATERIALS

Negative Collodion

Stripping Collodion

Rubber Stripping Solution

Hunt, Philip A., Company, 253 Russell St., Brooklyn, N. Y.—2432 Lakeside Ave., Cleveland, Ohio—1076 W. Division St., Chicago, Ill.

Mallinkrockdt Chemical Works, 3600 N. 2nd St., St. Louis, Mo.

WHIRLERS

Lanston Monotype Machine Co., 24th St., at Locust St., Philadelphia, Pa.

Miles Machinery Co., 18 E. 16th St., New York, N. Y.

Ostrander-Seymour Co., The, 1870 S. 54th Ave., Cicero Station, Chicago, Ill.

Rutherford Machinery Co., Div. General Printing Ink Corp., 100 Sixth Ave., New York, N. Y.

Wesel Mfg. Co., 468 Fourth Ave., New York, N. Y. and Scranton, Pa.

Zarkin Machine Co., Inc., 355 E. 27th St., New York, N. Y.

by having the job color proved before going to press, and an exact formula made for each color, with the components weighed accurately to 0.01 ounce. This procedure more than pays for itself in saving of pressroom time. The attaching of the plate to the cylinder must be correctly done or it will involve costly difficulties later. Methods of so locating the photolith image on the plate, that the plate can be placed on the cylinder in the exact position, are described.

Miscellaneous

Synthetic Rubber (Book). W. J. S. Naunton (with an Introduction by W. J. Pope). Published by Macmillan & Co., Ltd., St. Martin Street, London, W. C. 2, England (2459 Prairie Avenue, Chicago, Illinois). 1937. 159 pages. 7s. 6d. net. This book gives the history and economic aspects of rubber, the relations between rubber and resin, the chemistry, physics, and technology of rubber and synthetic rubber including the molding, curing, and adhesion or bonding of the latter. The advantages of Neoprene are emphasized, and illustrations of these advantages in comparison with natural rubber are given. Applications of the synthetic product are summarized.

Amalgam Printing Forms. H. Renck. *German Patent* No. 644,238 (June 17, 1937). Process for the production of amalgam printing forms on which the non-printing areas are regenerated during printing in any manner desired, characterized in that after imposition of the image on the press plate the non-printing areas are treated, e. g. by rolling up with glycerine which is saturated with a mixture of a mercury salt and another amalgam forming metal salt.

Decalcomania Adapted for Composing Words. J. E. Adair. *U. S. Patent* No. 2,089,779 (Aug. 10, 1937). A decalcomania the transferable subject of which is a letter of the alphabet, there being on the same lines along which the decalcomania is to be trimmed when the letter is to be placed beside any other letter of the same alphabet in a composition, and each line having associated therewith a character or characters indicating the letter or letters requiring that the decalcomania be trimmed along that line.

8 Minutes by Wire. Anonymous. *Inland Printer*, 99, No. 5, Aug. 1937, pp. 59–60. Natural color photographs can be transmitted by the Finch-Telechrome process. Color-separation negatives are affixed to a drum and scanned with a beam of light, signals being produced which may be transmitted over regular long distance telephone connection and recorded at the receiving end. A discussion of the process is included in the article, and further discussion by J. S. Mertle will be found in Graphic Arts Monthly, 9, No. 8, Aug. 1937, pp. 36, 38.

The Cost of Idleness. S. J. Worms. *The Photo-Lithographer*, 5, No. 7, July 1937, pp. 45–6, 63. Importance of the following factors in operating a photo-lithographic establishment are discussed: (1) proper inspection, repair, operation, and replacement of machinery, (2) adequate supplies of paper, ink, press plates, other material, tools, equipment, and instructions, (3) maintenance of suitable temperature, (4) full quotas of work and of operators, and (5) utilization or renting of space in the plant.

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FOR SALE — 110 and 120 line 29" Circular Levy Standard Screens with holders, fine conditions, bargains, E. T. Sullebarger Co., 538 South Clark Street, Chicago, Ill.

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PHOTO-OFFSET MAN, practical, competent to manage business, if desired. Can operate camera, line or halftone, make plates, hand transfer or photo, and run offset press. Have also had experience selling and estimating. Responsible. References. Single, age 35. Will consider 6 months' contract to put offset firm on profitable production basis. BOX 0-4.

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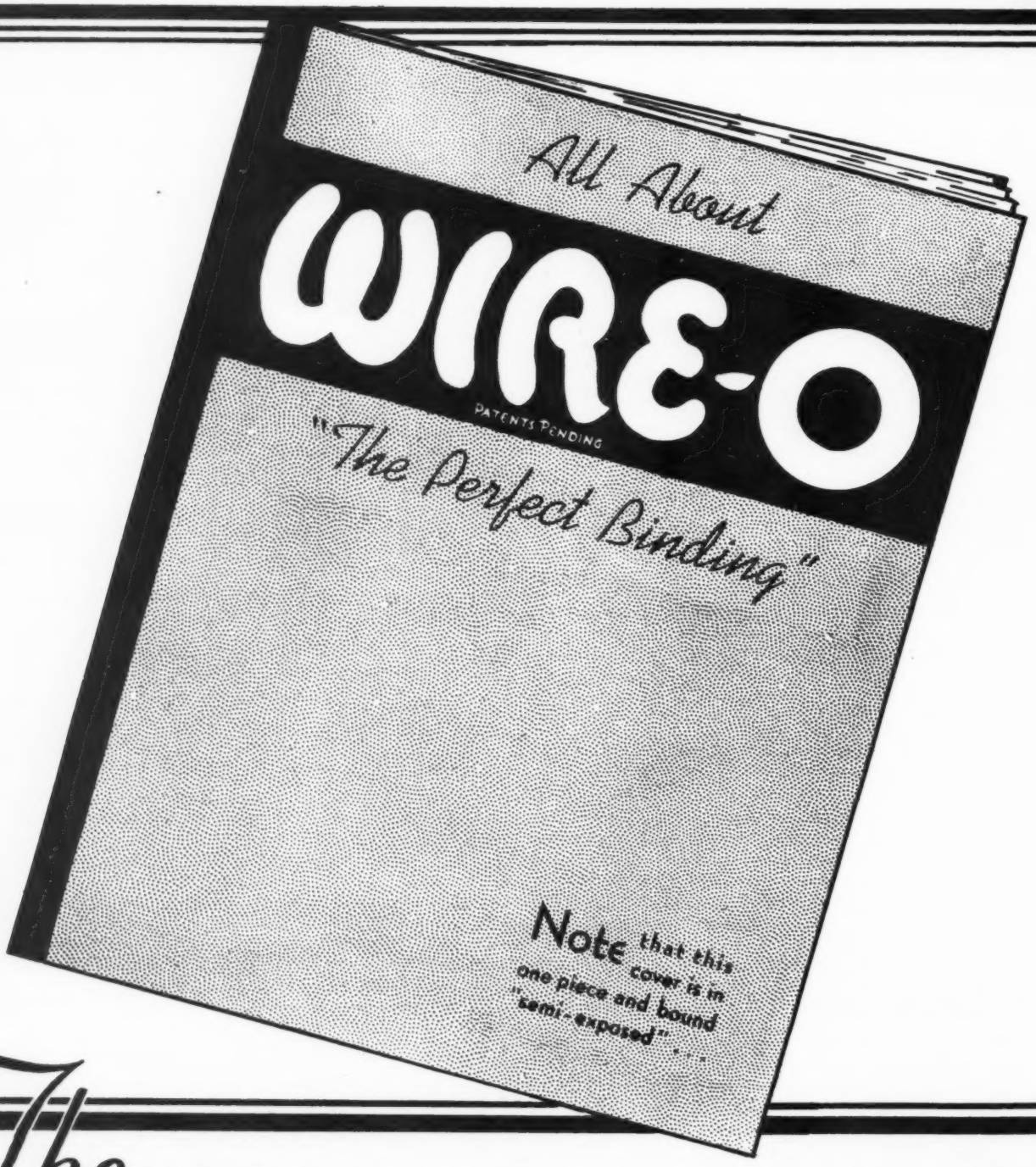

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Michigan Book Binding Co.	Detroit, Mich.
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Levey Ptg. Co.	Indianapolis, Ind.
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Falls City Bindery Co.	Louisville, Ky.
Smead Mfg. Co.	Hastings, Minn.
Dobson-Evans Co.	Columbus, Ohio
Hawkeye Bindery Co.	Des Moines, Iowa
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ADVERTISER'S INDEX

October, 1937

Agfa Ansco Corp. 44
American Litho Supply Co. 93
Artists Supply Co. 92

Baum, Russell Ernest 85
Binghams' Sons Mfg. Co., Sam'l 32
Bulkley, Dunton & Co. 38

California Ink Co. 77
Cantine, Martin, Company 40
Chillicothe Paper Co. 64
Christensen Machine Co. 71
Classified Advertising 93
Columbia Offset & Reproduction Corp. 72
Coxhead, R. C., Corp. 89
Crescent Ink & Color Co. of Penna. 81

Defender Photo Supply Co. 56
Doetzel-Corey Co. 89
Driscoll Co., Martin 72

Eastman Kodak Company 29

Fototype 93
Fuchs & Lang Mfg. Co., Div. General Printing Ink Corp. 2

Gaetjens, Berger & Wirth, Inc. 62
Gegenheimer, William, Inc. 70
Gettler, John M. 91
Godfrey Roller Co. 68
Goerz American Optical Co., C. P. 85

Harris-Seybold-Potter Co. Back Cover
Henschel Mfg. Co., C. B. 93
Hilo Varnish Corporation 83
Hinson, McAuliffe Corp. 83
Hoe, R. & Co., Inc. Inside Front Cover
Holland, Thor 77
Hunt Co., Philip A. 59

Illinois Plate Graining Co., Inc. 70
International Paper Co. 48
International Press Cleaner & Mfg. Co. 89

Kopy Komposers 73
Korn, William, Inc. 91

Lanston Monotype Machine Co. 7
Linde, J. E., Paper Co. Insert Between Pages 64-65
Lithographic Plate Graining Co. 73

Maddox Lithoplate Graining Co. 92
Mallinckrodt Chemical Works 63
Marquardt & Co., Inc. 4
Maxwell Paper Co. 9
Meloy, Dr. L. R. 85
Merck & Co. 52
Miehle Printing Press & Mfg. Co. 8
Miles Machinery Co. 66
Mille, W. P. 93

National Offset Supply Co. 92
New England Quartz Co. of New York 91
Norman-Willets Co. 79

Offset Products Corp. 87
Okie, Francis G. 92

Phillips & Jacobs 61
Photo-Litho Plate Graining Co. 85
Pitman Company, Harold M. 34

Rapid Roller Co. 5
Rathburn & Bird Co., Inc., The 79
Reliable Lithographic Plate Co., Inc. 60
Repro-Art Machinery Co. 68
Roberts & Porter, Inc. 46
Royal Paper Corp. 57

Siebold, J. H. & G. B., Inc. 30
Sinclair & Carroll Co. 60
Sinclair & Valentine Co. Inside Back Cover
Sorg Paper Co. 73
Standard Envelope Mfg. Co. Insert Between Pages 8-9
Sullebarger, E. T., Co. 91
Swart-Reichel, Inc. 81

Taylor, W. A., & Co., Inc. 87
Trussell Mfg. Co. 94-95

Vulcan Proofing Co. 36

Webendorfer-Wills Co., Inc. 50
Wesel Mfg. Co. 6
Western Litho Plate Graining Co. 70
"Where-To-Buy-It" 74-90
Williams, R. S., Co., Inc. 58

Zarkin Machine Co., Inc. 1
Zeiss, Carl 68

(The Advertiser's Index has been carefully checked but no responsibility can be assumed for any omission)